INTERIM DESIGN PLAN

Red Hook Ball Fields 5, 6, 7, and 8
98 Lorraine Street
Block 581, Lot 1
Brooklyn, New York 11231

Prepared for:
United States Environmental Protection Agency Region 2
Emergency and Remedial Response Division
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1.0 INTRODUCTION

This Interim Design Plan (IDP) has been prepared to describe the interim removal actions implemented at the Red Hook Ball Fields 5 through 8 (overlain by Soccer Field 7) and the perimeter planting strips (the Site), described in Section 1.2, and presents the general methodology and schedule for the implementation of the Removal Action Work Plan (RAWP) at the Site, as required by Article VIII, Paragraph 26(d) of the Administrative Settlement Agreement and Order on Consent for a Removal Action (EPA Index No. CERCLA 02-2016-2010), referred to henceforth as "the Order," between the United States Environmental Protection Agency (EPA) and the City of New York Department of Parks and Recreation (DPR).

1.1 Purpose and Organization of the Interim Design Plan

This IDP has been prepared to describe the interim removal actions implemented at the Site until the removal action is completed and presents the general methodology and schedule for the implementation of the RAWP at the Site. This IDP is organized into four (4) sections as follows:

- **Section 1: Introduction** – Presents the purpose of the IDP, description and history of the Site and the applicable requirements included in the Order.
- **Section 2: Interim Removal Measures** – Presents the interim removal measures implemented at the Site.
- **Section 3: Removal Design Methodology** – Presents the methodology to achieve the removal action requirements, staging areas, Site security, traffic control and environmental monitoring.
- **Section 4: Removal Design Schedule** – Presents the schedule for completion of all activities within the RAWP including design and construction drawings, procurement of contractors, Site setup/mobilization of personnel and equipment, all on-site construction work including Site restoration, and finalization of the Site Management Plan and Institutional Controls.
- **Section 5: References** – Identifies the references used in the preparation of this IDP.

1.2 Site Location and Legal Description

The Site is located south of Lorraine Street, east of Hicks Street, north of Bay Street, and west of Henry Street in Brooklyn, New York and consists of Ball Fields 5 through 8 overlain with Soccer Field 7 and the perimeter planting strips, which are part of the Red Hook Recreation Area. Drawing 1 presents the existing Site layout and the Site location. The Site consists of a 4.7-acre portion of the Red Hook Recreation Area, a 58-acre park. The Site address is 98 Lorraine Street, Brooklyn, New York, 11231. The Site is designated as Block 581, Lot 1. The Order requires a removal action at Ball Fields 5 through 8 (as well as Ball Field 9, which will be addressed during a separate phase of the removal action as discussed below) and extends to the curb lines of the sidewalks surrounding the ball fields.

1.3 Current Site Use

The Site, including the planting strips, is currently closed to public access and is not utilized for any

recreational or other purpose.

1.4 Historic Site Use

The Site was originally land under water and wetlands which were part of the Gowanus Bay. The Site was filled to raise the elevation some time prior to 1900. According to the EPA, the Site was occupied by smelting and refining companies from the late 1920s through the late 1930s, including Columbia Smelting & Refining Works, Incorporated (Columbia). The Site was developed with a single-story, approximately 14,000-square-foot building from the mid to late 1920s, until it was demolished prior to 1940. A 1931 advertisement in the Standard Metal Directory for Columbia, located at 98-107 Lorraine Street, indicated that the company dealt with white metals and alloys as well as brass and bronze ingots. The advertisement indicated that the company manufactured soft lead, antimonial lead, babbitt, solder, type metals, terse metal, britannia metal, die-cast metal, unbreakable metal, and rerun zinc; consumed pig percentage metal, cable lead, battery plates, soft lead, type metals, babbitt, joists, pewter and dresses; and dealt in pig tin, pig lead, copper, antimony, aluminum, spelter, scrap metals and residues. A 1938 Sanborn fire insurance map shows that eight furnaces were present in the historic on-site building that operated as a refinery. The former Columbia Smelting & Refining Works facility was historically located within Ball Field 7 (northwest corner of the Site). The investigation of this smelter and resulting Order on Consent between the DPR and the EPA is discussed further below. Since demolition of the historic Site building in the late 1930s, the Site has been utilized as a public park dating back to 1940.

1.5 Applicable Regulatory Standards

The established EPA and New York State Department of Environmental Conservation (NYSDEC) regulatory standards and guidelines used to evaluate the results of the soil sampling are identified below.

1.5.1 NYSDEC Soil Cleanup Objectives

The results of analyses of the soil samples were compared to the NYSDEC Restricted Residential Use Soil Cleanup Objectives (RRUSCOs) in Table 375-6.8(b) of 6 New York Codes, Rules and Regulations (NYCRR) Part 375-6 (Remedial Program Soil Cleanup Objectives). The Restricted Residential Use category applies to sites to be used for active recreational uses, including public uses with a reasonable potential for soil contact.

1.5.2 EPA Removal Management Levels

The results of analyses of the soil samples were also compared to the EPA Removal Management Levels for Residential Soil (HQ=1), November 2015 (RMLs). The Regional Removal Management Levels (RMLs) are used to support the decision for EPA to undertake a removal action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The RMLs are risk-based concentrations derived from standardized equations combining exposure assumptions with toxicity data from the Superfund program's hierarchy. Although they are not necessarily protective for long-term exposures, exceedance of an RML does not imply that adverse health effects will occur. The RMLs contained in the RML table are generic. In other words, the RMLs are calculated without site-specific

information (e.g., the time-frame over which individuals may potentially be exposed to site contaminants).

1.6 Summary of Previous Investigations

1.6.1 Final Soil Sampling Trip Report – April 2015

As part of the Removal Assessment of the Columbia Smelting and Refining Works Site, the EPA and its contractor, Weston Solutions, Inc. performed surface soil sampling to characterize the soil from zero to two feet below ground surface (bgs) on Ball Fields 5 through 8 and associated planting strips on Lorraine and Bay Street, as well as other locations within Red Hook Park. Ball Fields 5 through 8 were divided into quadrants numbered 2 through 17, the planting strip on Lorraine Street was designated Quadrant 1 and the Planting Strip on Bay Street was designated Quadrant 18. Five borings were advanced in each quadrant, and the samples from the same respective depth intervals in each boring were composited; one composite sample represented each depth interval within each quadrant. The depth intervals were 0 to 1 inch, 1 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches bgs. A total of ninety-four (94) composite soil samples were submitted for laboratory analysis of Target Analyte List (TAL) metals and tin.

Antimony, arsenic, cobalt and lead were detected at concentrations exceeding the EPA Removal Management Levels (RMLs) for Residential Soil (HQ=1) and NYSDEC RRUSCOs (if one exists). In addition, barium, cadmium and copper were frequently detected at concentrations below the EPA RML, but exceeding the RRUSCOs.

1.6.2 Red Hook Park Superfund Soil Sampling Field Reports – June 2015

Soil sampling was conducted by the EPA and its Weston contractors at the Columbia site. The DPR report titled "Red Hook Park Superfund Soil Sampling 2014-2015 Field Reports and Contaminant Results" dated July 30, 2015 (Soil Sampling Report) was prepared to summarize the results of soil sampling. The sampling included the Red Hook East Houses, Ball Fields 5 through 9, Soccer Fields 1, 2, and 6, and limited areas of the Bay Street planting Strips, Soccer Field 3 and west of Red Hook Pool, and was completed in October 2014, March 2015, and April 2015; the March 2015 sampling was discussed in Section 1.6.1 above. Lead, arsenic, and cadmium were detected above NYSDEC RRUSCOs and above EPA RMLs in soil samples collected from 0 to 2 feet bgs in the majority of the sample locations.

1.6.3 Infiltration, Soil and Groundwater Testing Report – May 2016

TRC conducted infiltration testing and a soil and groundwater investigation on Ball Fields 5 through 8 in March 2016. Infiltration testing was performed to provide data for the design of green infrastructure for management of stormwater runoff in support of reconstruction of the Site. The purpose of the soil and groundwater sampling and testing was to obtain background chemical data for media that could be impacted by green infrastructure practices installed during Site reconstruction. Additionally, Oweis Engineering, Inc. (Oweis), under subcontract to TRC, performed a geotechnical investigation concurrently while TRC was performing soil and groundwater sampling and infiltration testing. Drawing 6 provides the approximate locations of the TRC and Oweis boring locations.

The investigation included the following field activities:

- Advancement of two soil borings each at five locations, for a total of 10 borings.
- Collection and analysis of twelve soil samples, including one blind duplicate, for the following parameters: 6 NYCRR Part 375-6 semivolatile organic compounds (SVOCs), 6 NYCRR Part 375-6 pesticides, 6 NYCRR Part 375-6 herbicides, Target Compound List (TCL) polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals plus tin and total cyanide.
- Conversion of five soil borings into temporary groundwater monitoring wells and collection and analysis of six groundwater samples, including one blind duplicate, for the following parameters: 6 NYCRR Part 375-6 SVOCs, 6 NYCRR Part 375-6 pesticides, 6 NYCRR Part 375-6 herbicides, TCL PCBs, TAL metals (total and dissolved), and cyanide; and
- Infiltration testing at a total of five locations.

The results of the Infiltration, Soil and Groundwater Testing indicate the following:

- No elevated photoionization detector (PID) readings or odors were identified in any of the borings. Uncontrolled historic fill material was observed from ground surface to 8.5 to 19 feet bgs. This stratum consisted of dark brown and gray sand, silt, and gravel, containing organics, bricks, glass, cinders and other miscellaneous debris. Groundwater was encountered in temporary monitoring wells from 8.75 to 11.50 feet bgs (elevation -0.12 to 1.35 feet, relative to the North American Vertical Datum of 1988 [NAVD 88]). Bedrock was not encountered during the investigation.
- The types and concentrations of SVOCs detected in the soil samples are consistent with the observed presence of historic fill at the Site. The concentrations of the SVOCs, consisting of polycyclic aromatic hydrocarbons (PAHs), detected in soil samples above the RRUSCOs and RMLs may generally be attributed to the characteristics of historic fill material potentially containing one or more of the following: ash, cinders, coal, slag, heavy oil, and/or asphalt. No SVOCs, including PAHs, were detected in the groundwater samples. PAHs generally have a relatively low water solubility and are adsorbed readily onto soil, and as a result PAHs are usually not found in groundwater at elevated concentrations.
- Metals (arsenic, barium, copper, lead and mercury) were detected in soil above the RRUSCOs. Generally, the concentrations of these metals decreased with soil depth. Arsenic, lead and/or cyanide were detected in soil samples above the RMLs. The types and concentrations of metals detected in soil samples above the RRUSCOs and RMLs may generally be attributed to the characteristics of historic fill material potentially containing one or more of the following: metal plating or smelting waste, ash, cinders, coal, slag, paint, and/or herbicides.
- No pesticides, herbicides or PCBs were detected in soil at concentrations exceeding the RRUSCOs or RMLs.
- Groundwater was encountered in the temporary monitoring wells at depths ranging from

approximately 8.75 to 11.50 feet bgs (elevation -0.12 to 1.35 feet, NAVD 88). Groundwater surface elevation measurements indicate that groundwater generally flows outward radially toward the north, east and south from near the center of the Site, consistent with local topography.

- During gauging with an oil/water interface probe and sampling of the temporary monitoring wells there was no sheen, odor, or discoloration detected in groundwater.
- Barium was detected at concentrations of 1,120 micrograms/liter (µg/L) and 1,040 µg/L in field filtered groundwater samples collected from RHGT-08 and RHGT-13, respectively. Although these concentrations are above the Class GA Value of 1,000 µg/L for barium, the concentrations are below the NYSDEC Groundwater Effluent Limitation of 2,000 µg/L (Table 5 of NYSDEC TOGS 1.1.1). Silver was detected at a concentration of 66.8 µg/L in field filtered groundwater collected from RHGT-02. Although this silver concentration is above the Class GA Value of 50 µg/L for silver, it is below the NYSDEC Groundwater Effluent Limitation of 100 µg/L (Table 5 of NYSDEC TOGS 1.1.1). Although detected at elevated concentrations in soil, including above the Protection of Groundwater SCOs (with the exception of copper), arsenic, copper, lead, and mercury were not detected in the field filtered groundwater samples. Iron, magnesium, manganese and sodium were detected in field filtered groundwater above Class GA Values; however, they are naturally occurring metals and the concentrations detected in the Site groundwater may be a result of salt water intrusion from the nearby basin and harbor. Notably, elevated levels of lead were not detected in the filtered groundwater samples.
- There were no SVOCs, pesticides, herbicides or PCBs detected at concentrations exceeding the Class GA Values in the groundwater samples collected from the five temporary monitoring wells.
- The calculated permeability coefficient was highest for the infiltration test completed at location RHGT-02, at the depth interval of 5 feet bgs (Ball Field 6 in the northwest portion of the Site). Therefore, the applicability of green infrastructure infiltration practices could be considered at this location.

1.7 Site Topography, Geology and Hydrogeology

1.7.1 Topography

The regional topography slopes downward to the southeast toward the Henry Street Basin and Gowanus Bay. The Site topography slopes downward to the northeast towards the intersection of Henry Street and Lorraine Street. Based on a review of the United States Geological Survey (USGS) 7.5-Minute Quadrangle Map (Brooklyn, NY 1995) and information contained in prior reports, including a topographic survey of the Site conducted in May 2016, the elevation of the Site ranges from approximately 8.5 to 11.5 feet NAVD 88.

1.7.2 Geology

The geology of Kings County consists of unconsolidated glacial deposits overlying crystalline bedrock. Based upon available literature (Buxton, Soren, Posner, and Shernoff, 1981), the subsurface geology for the Site likely includes the following formations: Pleistocene upper glacial deposits, Gardiners Clay, Jameco Gravel, Cretaceous Raritan Formation consisting of sands and clays, and crystalline bedrock. The depth to crystalline bedrock for the area is estimated to be approximately 200 feet bgs.

Prior reports indicate the Site was historically land under water (circa 1886) until filling occurred (circa 1904). Prior investigations on the Site found that in general, soil encountered at the Site consisted of uncontrolled historic fill material from ground surface to 8.5 to 19 feet bgs overlying gray to black silty clay to a depth of at least 21 feet bgs (maximum boring depth). The historic fill material consisted of dark brown, gray, sand, silt, and gravel, containing organics, bricks, glass, cinders and other miscellaneous debris. In addition, an organic peat layer was identified above the clay in two boring locations.

1.7.3 Hydrogeology

The Site is located approximately 575 feet northwest of the Henry Street Basin, 1,600 feet north of the Gowanus Bay, and 1,700 feet west of the Gowanus Canal, an extension of Gowanus Bay. Based on topography in the area, the assumed groundwater hydraulic gradient direction is towards the southeast. According to information obtained from prior reports and the infiltration and geotechnical investigation performed by TRC and Oweis in May 2016, the groundwater surface is at depths ranging from approximately 8.75 to 11.50 feet bgs (elevation -0.12 to 1.35 feet NAVD 88).

1.8 Nature and Extent of Contamination

1.8.1 Soil

Antimony, arsenic, cobalt and lead were detected at concentrations exceeding the EPA RMLs and NYSDEC RRUSCOs (if a criteria exists) in soil samples collected from 0 to 2 feet bgs in the majority of the sample locations. In addition, barium, cadmium and mercury were detected at concentrations below the EPA RMLs but exceeding the NYSDEC RRUSCOs in a majority of sample locations. The type and concentrations of metals detected in soil samples above the RRUSCOs and RMLs may generally be attributed to the characteristics of historic fill material potentially containing one or more of the following: metal plating or smelting waste, ash, cinders, coal, slag, paint, and/or herbicides.

The SVOC benzo(a)pyrene was detected at concentrations exceeding the EPA RML and NYSDEC RRUSCO in two soil samples selected from 2 to 4 feet bgs at the Site. Five additional SVOCs, all polycyclic aromatic hydrocarbons (PAHs), were detected in soil samples at concentrations above the RRUSCOs. The concentrations of SVOCs may generally be attributed to the characteristics of historic fill material potentially containing one or more of the following: ash, cinders, coal, slag, heavy oil, and/or asphalt.

There were no pesticides, herbicides or PCBs detected in soil at concentrations exceeding the RRUSCOs or RMLs.

1.8.2 Groundwater

Barium was detected in two filtered groundwater samples and silver was detected in one filtered groundwater samples at concentrations slightly above the Class GA Values. Iron, magnesium, manganese and sodium were detected in dissolved groundwater above Class GA Values; however, they are naturally occurring metals and the concentrations detected in the Site groundwater may be a result of salt water intrusion from the nearby basin and harbor.

2.0 INTERIM REMOVAL MEASURES

2.1 Interim Removal Measures Implementation

This IDP presents the actions taken, and actions which DPR will continue to take, to fulfill the interim removal measure requirements of Paragraph 23(a) through (c) of the Order:

1) Restriction of public access to Ball Fields 5 through 8 was implemented in October 2014, and restriction of public access to the surrounding planting strips was implemented in May 2015. A 12-foot high chain-link fence surrounds the entire park ball field area and DPR restricted access to Ball Fields 5 through 8 by padlocking all gated entrances to the area. In addition, DPR restricted public access to the planting strips by installing a 4-foot high range fence along the planting strips.

2) Signs were installed on all entrances to Ball Fields 5 through 8 with the following information:

Red Hook Ballfields 5, 6, 7, and 8

Ballfields Closed

A cleanup of lead contaminated soil is being planned by the NYC Parks, the Department of Health and the Environmental Protection Agency

For more information visit

www.epa.gov/region2/superfund/removal/columbia

For ballfield permit information please call (718) 965-8912

3) The natural turf (grass) cover on Ball Fields 5 through 8 and surrounding planting strips, mulch, and vegetation cover is maintained. The purpose is to stabilize the soils and reduce the presence of bare soil in these areas, in order to minimize erosion and the potential for exposure to contaminants via direct contact and off-site migration of soil contaminants by air travel or stormwater runoff.

4) The condition of the Site vegetation/mulch and site security (i.e., fencing and locked gates) are verified during periodic Site inspections by park maintenance personnel.

The interim removal measures listed above were inspected and maintained on periodic basis by DPR employees between October 2014 and June 2015 until the site was fenced, gates locked, and public access restricted. Routine maintenance of the vegetative cover consists of, and will continue to consist of, visual inspections and the addition of wood chips to areas of dead vegetation or bare ground on a monthly basis.

Currently, DPR makes routine site visits to verify that the Site fence is in good condition and the gates are locked. Future Site inspections for the interim site remedy will be completed on a monthly basis, and the associated checklist logs will be submitted to the EPA On-Scene Coordinator by the DPR Project Coordinator via email the 15th of every month. A Site Inspection and Maintenance Checklist Log template is presented in Appendix B.

A Contingency Plan was developed to be implemented following a change in Site conditions or significant disturbance that causes or threatens to cause a potential release of waste material on, at, or from the Site that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment. This includes a significant disturbance or a disruption of the Site vegetative cover, contaminated soils, or other change in Site conditions which may result in the significant disturbance of and/or exposure to soil containing elevated contaminant levels. The Contingency Plan is presented in Appendix C.

3.0 REMOVAL DESIGN METHODOLOGY

3.1 Remediation Goals for Ball Fields and Planting Strips

The Order issued by the EPA identified the scope of the remedy in Article VIII Paragraph 23(d). The scope of the remedy, includes the following:

1) Place a permeable demarcation layer over the contaminated soil and provide at least a 12-inch cover layer of clean soil, fill or other material, approved by the EPA that meets the requirements of 6 NYCRR 375-6.7(d) and the substantive requirements of NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10) Technical Guidance for Site Investigation and Remediation (DER-10) 5.4(e).

2) Where it is anticipated that such cover in the Planting Strips will damage the existing trees or adversely affect survival of trees, an alternate methodology to eliminate exposure to soil contaminants within the upper 12-inches of soil may be proposed by DPR for approval by EPA within the Interim Design Plans discussed in Paragraphs 26(d) and 26(e).

3) Restore the Site to public park usage following completion of the response action pursuant to Paragraph 23(d).

4) Establish Institutional Controls (ICs) for the Site, as determined by the NYSDEC and EPA and under NYSDEC oversight, to prevent future exposure to Site-related hazardous substances that are left in place at the Site, including, but not limited to, a restrictive covenant. The ICs will be documented in a NYSDEC-approved Site Management Plan.

3.2 Proposed Remedy Overview

The scope of the proposed remedy consists of a cover system across the Site and long-term institutional controls. The new park design will incorporate the environmental protections required under the Order and approved by the EPA. The new park design will be protective of public health and environment by preventing exposure to on-Site contaminated soil in the interim, during construction and in the future. The removal design primarily consists of a cover system consisting of synthetic turf, paved areas, clean topsoil, bonded aggregate, and/or permeable pavers underlain by a demarcation layer. Long-term institutional controls will consist of an Environmental Easement or other acceptable restrictive covenant. A Site Management Plan will be prepared that will provide the Site remedy inspection, maintenance, and monitoring protocols to verify and document that the remedy continues to protect public health and environment in the future. The proposed removal plan is shown on Drawing 2. The scope of the proposed remedy, includes the following key components:

1) Raising the elevation of the athletic fields over existing soils and installation of synthetic turf cover;

2) Installation of a 1-foot thick layer or more of clean cover in much of the planting strips;

3) Installation of up to a 1-foot thick layer of clean cover, paving, bonded aggregated and permeable pavers, mulch, ground cover and fencing at some locations where existing mature trees will be

maintained;

4) Implementation of a long-term Site inspection and monitoring program, and

5) Establishment of institutional controls for the Site.

3.2.1 Elevation of Ball Fields and Installation of Synthetic Turf System

The removal design for Red Hook Park Ball Fields 5 through 8 will replace the four (4) natural turf ball fields with a synthetic turf surface. Soccer Field 7 will also overlay the central portion of the ball fields. The existing athletic field area perimeter curb wall will remain; however, the existing 12 foot high chain-link fence will be removed. A new curb wall will be installed to raise the elevation to 11.25 feet NAVD 88 at the top of the curb, above the Base Flood Elevation (BFE) of 11.0 feet, located approximately six feet from the existing curb wall towards the center of the block, and will provide enhanced flood protection and storm resiliency. A new continuous 12 foot high chain-link fence will be installed within the new concrete curb wall around the field area. A 6 foot wide bioswale will be installed around the parts of the Site perimeter between the new and existing curbs, capturing a portion of the storm water run-off from the field. The new and existing curbs, the bioswale and other features are detailed on Drawing 3.

The remediation of the existing natural turf fields will involve the excavation and off-site disposal of up to approximately 6-inches of topsoil (organic material such as grass and roots). The topsoil will be removed to allow for preparation (regrading and compaction) of the subgrade to prevent uneven field settlement following construction. Additional excavation will be required in the field area to allow the installation of subgrade stormwater drainage features, perimeter bioswale, utilities (electric and water lines), and foundation elements (fence foundations and curbing). When the material is geotechnically suitable, on-site reuse of excavated materials will be maximized below clean cover materials. These areas will include the northeast, northwest and southeast portions of the field that need to be raised up to 2.5 feet to achieve the BFE of 11 feet and the areas will be provided with at least 1-foot thick layer of clean cover.

Following preparation of the subgrade, a permeable demarcation layer consisting of orange plastic mesh (i.e., snow fencing) will be installed directly below the clean cover materials and above the underlying existing soils. The demarcation layer will be installed continuously across the Site.

Clean fill will be imported as needed to raise the existing grade. The imported fill will meet 6 NYCRR Part 375-6.8 Restricted-Residential Use Soil Cleanup Objectives (RRUSCOs) and geotechnical requirements. Imported fill will be placed and compacted as necessary to achieve the desired grades. Following placement and compaction of soil, the synthetic turf system which includes a geotextile fabric, a 6-inch thick layer of porous aggregate drainage base, a 1-inch thick shock pad, and the 2-inch thick synthetic turf layer with infill (sand or coated sand) will be installed. The synthetic turf cover details are shown on Drawing 5.

3.2.2 Areas to Receive 1 Foot or Greater of Cover

The proposed remedy for areas that will receive at least 1-foot thick layer of clean cover is discussed below.

3.2.2.1 Bay, Hicks, and Henry Streets and Portions of Lorraine Street Planting Strips

The proposed remedy for the planting strips located along Bay, Hicks, and Henry Streets and portions of Lorraine Street will include the removal of trees, excavation of a minimum of 1-foot thick layer of existing soil, placement of a demarcation layer and backfilling with clean soil, stabilized with mulch and vegetative plantings. In addition, in areas of the planting strips where trees will be planted, a minimum of an additional 1 foot of existing soil will be removed to allow for the installation of new trees. Cross sections of the proposed remedy cover for the planting strips located along Henry and Lorraine Street is shown on Drawing 3; this is representative of the proposed remedy cover for the planting strips located along Bay and Hicks Streets.

3.2.2.2 Bioswale

The construction of the perimeter bioswale will generally include the excavation of at least a 2-foot depth of existing soil to allow for the installation of a demarcation layer and a 1-foot thick stone base followed by (from bottom to top) a geotextile fabric and 12 inches of bioretention soil (55-60% sand, 25-35% topsoil, 10-15% leaf compost and less than 5% clay by volume per DPR specification) covered with up to 3 inches of mulch and vegetative plantings at the surface. Cross sections of the proposed bioswale are shown on Drawing 3.

3.2.2.3 New Trees within Tree Pits in Sidewalk along Lorraine Street

Five of the existing tree pits within the sidewalk along Lorraine Street will be excavated to a depth of at least 2 feet bgs to allow for the installation of new trees at these locations. Following soil excavation, a demarcation layer will be placed along the bottom of the excavation over the underlying existing soil. The new tree and clean soil will then be placed above the demarcation layer followed by a combination of permeable pavers and a mulch layer at the surface. The permeable pavers will be installed in the tree pits to within approximately 1 foot of the tree trunk. Cross sections of the proposed remedy cover for the new trees within tree pits along Lorraine Street are shown on Drawing 4.

3.2.3 Areas to Receive Up to 1 Foot of Cover

The proposed remedy for areas that will receive less than 1 foot of cover is discussed below.

3.2.3.1 Existing Mature Trees within Planting Strip along Lorraine Street

The proposed remedy for the five existing mature trees located along Lorraine Street will consist of the removal of approximately 0 to 6 inches of surface soil in areas within the critical root zones closest to the tree trunks. The surface soil located above and within the existing tree root zone will be removed using an air knife and/or by vacuum-assisted hand excavation. Up to 12 inches of soil will be removed if possible further away from the trunk of each tree where there are less tree roots. Following removal of the surface soil, a demarcation layer will be placed over the existing underlying soil and exposed tree roots, followed by clean topsoil and up to 3 inches of mulch and vegetative ground cover at the surface. All work will be conducted in accordance with recommendations from an arborist and the project specifications to avoid long-term damage to the trees. In addition, all planting strip areas will be restricted from public access by

the installation of a 4-foot high picketed steel fence. A cross-section of the proposed cover remedy for the existing mature trees located in the planting strips along Lorraine Street is shown on Drawing 3.

3.2.3.2 Existing Mature Trees within Tree Pits in Sidewalk along Lorraine Street

The proposed remedy for six existing mature trees located in tree pits in the sidewalk along Lorraine Street will consist of the removal of approximately 0 to 6 inches of surface soil. The surface soil located above and in between the existing tree root zone will be removed using an air knife and/or by vacuum-assisted hand excavation. Up to 12 inches of soil will be removed if possible further away from the trunk of each tree where there are less tree roots. Following removal of the surface soil, a demarcation layer will be placed over the existing underlying soil and exposed tree roots, followed by a clean topsoil layer, and a combination of permeable pavers and a bonded resin aggregate layer. The permeable pavers will be installed in the tree pits to within approximately 1 foot of the existing tree trunk. A bonded aggregate will be installed in the area within an approximately 1-foot wide radius of the existing tree trunk, located between the tree trunk and the permeable pavers. The installation area for the bonded aggregate will be determined based on field conditions.

3.2.3.3 Existing Paving

The existing concrete paved sidewalks located along Henry and Bay Streets will remain. The estimated thickness of the existing sidewalk is a minimum of 10 inches of concrete and subbase. No further action is proposed for these areas. However, if any repairs are required, the sidewalk will be replaced to the same thickness and elevation.

3.2.3.4 New Paving

New concrete paving will be installed along Hicks Street associated with the installation of a new planting strip, new walkways, field access ramps and ball field dugouts, and at the street corners. In addition, new concrete paving will be installed following the removal of existing trees and tree pits along Henry and Bay Streets. The new paving will consist of a minimum of 10-inch thick layer which includes a demarcation layer, subbase material and concrete. The existing sidewalk along Lorraine Street will also be removed to allow for the regrading and placement of a new paved sidewalk at this location to meet the new adjacent 6-inch high curbing. In areas of the sidewalk where the existing concrete gravel subbase material will be reused, the demarcation layer will be placed above the existing subbase material. Details for new paving are shown on Drawing 5.

3.2.4 Institutional Controls

A discussion of the institutional controls to be implemented at the Site is presented below.

3.2.4.1 Environmental Easement or Other Acceptable Restrictive Covenant

The proposed remedy includes the establishment of an Environmental Easement, Declaration of Covenants and Restrictions or other acceptable restrictive covenant for the Site which will include requirements for the following in perpetuity, in accordance with NYSDEC approval:

- Defined allowable uses of the Site consistent with 6 NYCRR Part 375-1.8(g)(ii) including restricted residential uses suitable for a public park;
- The implementation of the Site Management Plan (SMP) to maintain the Site post-removal controls;
- The conduct of all future activities on the Site that disturb remaining contaminated material in accordance with the procedures and notification requirements established in the SMP; and
- The conduct of Site inspections, monitoring, and an annual periodic certification consistent with the SMP.

Following acceptance and execution of the Environmental Easement or other restrictive covenant by the EPA and NYSDEC, the restrictive covenant on the deed will be recorded with the County Clerk or New York City Register and a copy of the filing receipt will be provided to the EPA and NYSDEC.

3.3 Remedy Implementation

A discussion of measures to be implemented at the Site during construction that will provide environmental controls and protection are presented below.

3.3.1 Staging Areas

Equipment and materials including construction equipment, decontamination station, dumpsters and roll-off containers, and all imported materials which are part of the design will be stored and staged in a manner that complies with applicable laws and regulations. In addition, direct contact of construction materials and existing soils will be minimized by staging materials on polyethylene sheeting, when practicable. The parking of worker vehicles on the Site it not anticipated. The locations of proposed equipment and material staging areas, truck inspection station, stockpile areas, and other pertinent removal management features are shown on Drawing L100.00, which will be refined as the design proceeds and prior to the start of construction. In addition, partial temporary closure of the traffic lanes adjacent to the Site may be necessary to allow for staging of equipment and materials.

3.3.2 Site Security

Site access will be controlled by gated entrances to the fenced property. The Site gates will be locked following the completion of daily work activities. Security guards may be provided for all gated entrances not locked during work hours. Temporary lighting may be provided by the contractor as needed for night-time work. A daily worker and visitor sign in sheet will be maintained in a log book on-site and made available for inspection upon request. The planned locations of the proposed construction fence and entrance gates are shown on Drawing L100.0.

3.3.3 Traffic Control

Drivers of trucks leaving the Site with soil/fill will be instructed to proceed without making unnecessary stops in the immediate vicinity of the Site to minimize concentrated neighborhood impacts from truck traffic and engine idling. The planned route on local roads for trucks arriving to and leaving the Site will be

established in the construction Traffic Control Plan. The truck routing will take into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; (f) overall safety in transport; and (g) compliance with applicable laws and regulations. To the extent possible, all trucks loaded with Site materials will travel from the Site using the designated truck routes. In addition, any sidewalk and/or partial temporary street closures needed for the project will be performed in accordance with New York City Department of Transportation (NYCDOT) rules and regulations.

3.3.4 Environmental Monitoring

During activities which disturb existing soil, real-time air monitoring for particulate levels will be performed at the perimeter of the exclusion zone and in the work areas as specified by the Community Air Monitoring Plan (CAMP) that will be prepared for the Site in accordance with NYSDEC/NYSDOH guidance (Appendix 1A of NYSDEC DER-10). Approaching or exceeding particulate action levels listed in the CAMP will be used along with visual evidence of excessive dust levels as a trigger to implement appropriate dust control measures (e.g., tarp covers for soil piles, water exposed soil areas).

Erosion and sediment control measures will be implemented in accordance with a Soil Erosion and Sediment Control Plan and Stormwater Pollution Prevention Plan (SWPPP) (silt fences and barriers, stabilized construction entrance, catch basin inlet controls). The SWPPP will be completed in accordance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity and a Notice of Intent will be filed with NYSDEC prior to the start of construction activities. The soil erosion and sediment controls will be installed in accordance with the SWPPP and inspected at least once a week and after every storm event by a NYSDEC qualified inspector to ensure that they are operating appropriately.

3.4 Remedy Approval Status

As of the date of this IDP, the schematic design for this project has been approved by DPR, the Public Design Commission, and local Community Board.

4.0 REMOVAL ACTION WORK PLAN SCHEDULE

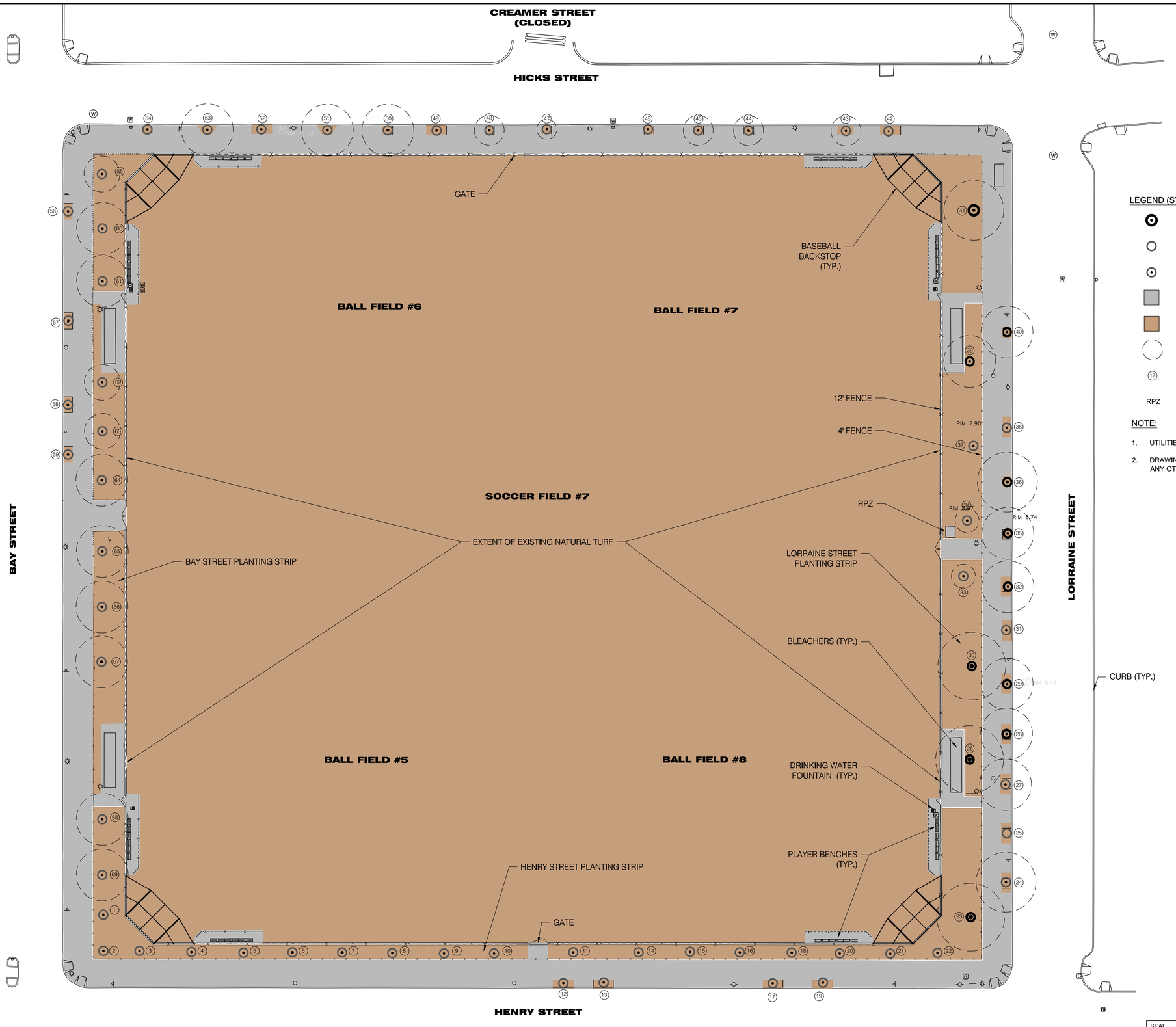
A proposed draft schedule for the completion of the removal action including time frames for the completion of design work and construction drawings, procurement of a construction contractor, Site mobilization of personnel and equipment, completion of on-site construction work and preparation of the Site Management Plan in support of the Institutional Controls in presented in Appendix A. This schedule will likely be revised as the design proceeds and prior to the start of construction.

5.0 REFERENCES

1. New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10, Technical Guidance for Site Investigation and Remediation dated May 2010.
2. 6 NYCRR Part 375 Environmental Remediation Programs, New York Codes, Rules and Regulations, New York State Department of Environmental Conservation Division of Environmental Remediation, effective December 14, 2006.
3. New York State Department of Environmental Conservation Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values And Groundwater Effluent Limitations, June 1998.
4. Buxton, Soren, Posner, and Shernoff, 1981, "Reconnaissance of the Ground Water Resources of Kings and Queens Counties, New York".
5. Draft United States Environmental Protection Agency Region 2, Administrative Settlement Agreement and Order on Consent For a Removal Action, Columbia Smelting and Refining Works Site, Brooklyn, New York, Index No. CERCLA-02-2015-2023, December 22, 2015.
6. TRC Engineers, Inc., Project Management Plan for Removal Action, Red Hook Ball Fields 5, 6, 7, and 8, 98 Lorraine Street, Block 581, Lot 1, Brooklyn, New York, June 24, 2016.
7. TRC Engineers, Inc., Quality Assurance Project Plan, Red Hook Ball Fields 5 to 8, Brooklyn, New York, March 2016.
8. TRC Engineers, Inc., Infiltration, Soil and Groundwater Testing Report, Red Hook Ball Fields 5 through 8, Brooklyn, New York, June 9, 2016.
9. TRC Engineers, Inc., Site-Specific Health and Safety Plan, Red Hook Ball Fields 5, 6, 7, and 8, Brooklyn, New York, March 2016.
10. Weston Solutions, Inc., Final Phase II Soil Sampling Trip Report, Columbia Smelting and Refining Works Site, Brooklyn, Kings County, New York, June 19, 2015.
11. Weston Solutions, Inc., Final Soil Sampling Trip Report, Columbia Smelting and Refining Works Site, Brooklyn, Kings County, New York, April 9, 2015.
12. Weston Solutions, Inc., Sampling Trip Report, Task No. 1411, Columbia Smelting and Refining Works Site, Preliminary Assessment/Site Inspection (PA/SI), Contract No.: EP-W-05-042, April 9, 2015.
13. NYCDPR, Red Hook Park Superfund Soil Sampling 2014-2015 Field Reports and Contaminant Results" dated July 30, 2015.
14. Historic Aerial Photographs (http://maps.nyc.gov/doitt/nycitymap/)

DRAWINGS

Drawing 1 – Site Layout
Drawing 2 – Removal Action Plan
Drawing 3 – Cross Sections A-A' and B-B'
Drawing 4 – Cross Sections C-C' and D-D'
Drawing 5 – Cover System Details
Drawing 6 – Boring Location Plan
Drawing L100.00 – Construction Staging Plan
Drawing L200.00 – Materials and Layout Plan
Drawing L300.00 – Grading Plan
Drawing L400.00 – Field Drainage Plan
Drawing L500.00 – Planting Plan



SITE LAYOUT

SCALE: 1"=20'-0"

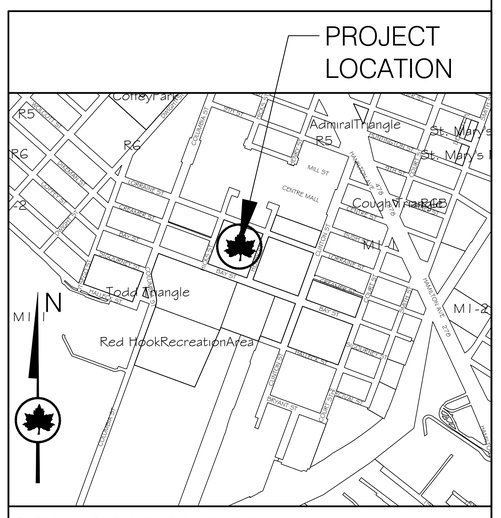
NOT FOR CONSTRUCTION

LEGEND (SYMBOLS NOT TO SCALE):

- TREE TO PROTECT
- EMPTY TREE PIT
- TREE/STUMP TO BE REMOVED
- PAVED
- LANDSCAPED AREA
- TREE CANOPY
- (17) TREE SURVEY IDENTIFIER
- RPZ REDUCED PRESSURE ZONE DEVICE

NOTE:

1. UTILITIES NOT SHOWN.
2. DRAWINGS SHALL BE USED FOR REMOVAL WORK ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE.



SITE LOCATION MAP N.T.S.

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NYC Parks

SEAL

PROJECT TITLE
REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M

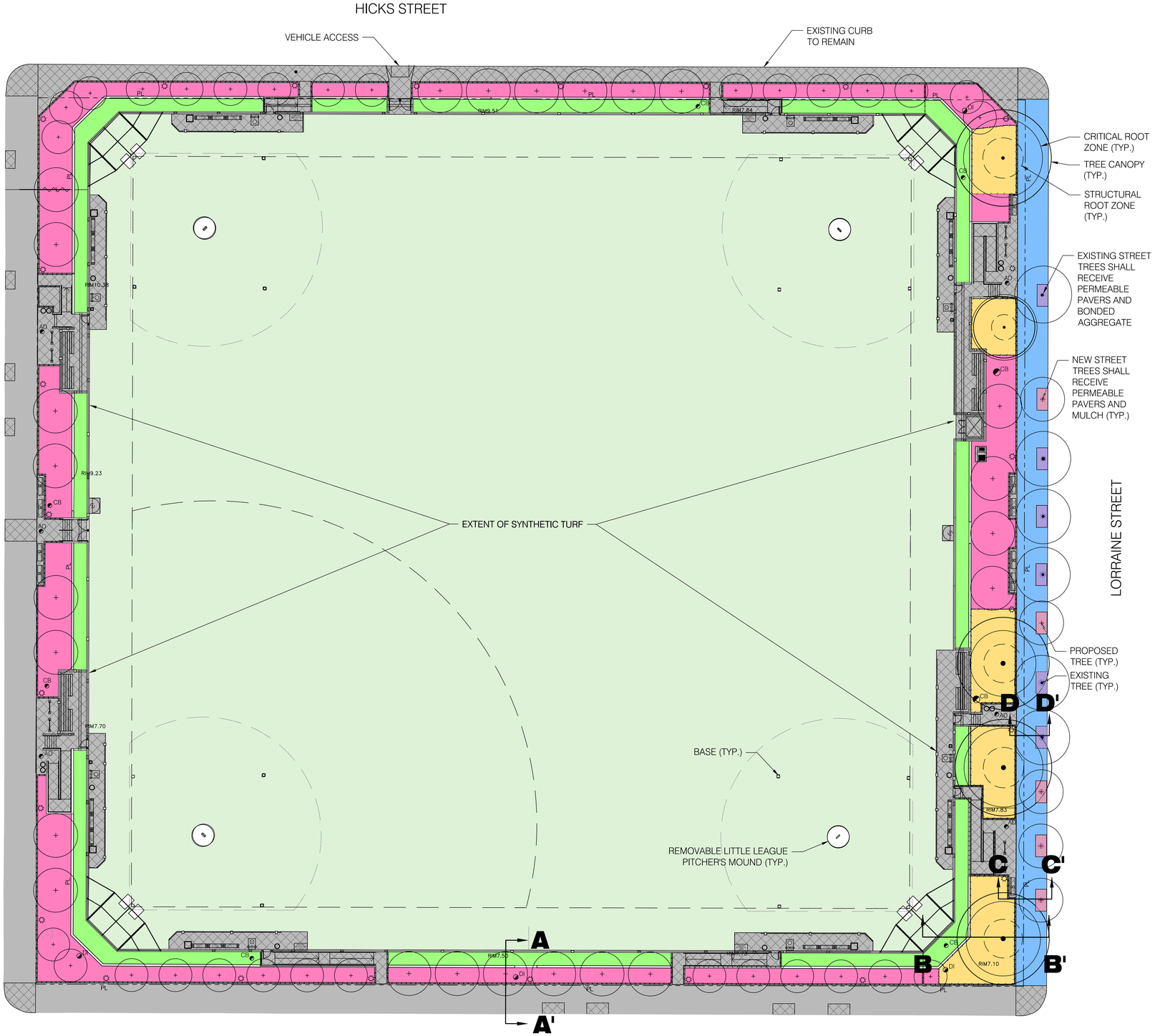
DRAWING TITLE
SITE LAYOUT

DESIGNED BY	DRAWN BY	CHECKED BY
JM/TRC	HD/TRC	JAMES PERONTO, P.E.

B-SCAN	SCALE	DRAWING NO.	CONTRACT NO.
	1"=20'-0"	1	B126-116M
	DATE 08/18/2016		

BLOCK 581

LOT 1



REMEDIAL PLAN

SCALE: 1"=20'-0"

NORTH

0 5' 10' 20' 40'

NOT FOR CONSTRUCTION

LEGEND (SYMBOLS NOT TO SCALE):

SHADING/HATCHING	TYPE OF COVER	REMEDIAL COVER
	SYNTHETIC TURF	MINIMUM OF 1-FOOT THICK LAYER OF CLEAN COVER WITH DEMARCATION LAYER BELOW.
	BIOSWALE	GROUND COVER WITH 3-INCH THICK LAYER OF MULCH UNDERLAIN BY A MINIMUM 1-FOOT THICK LAYER OF CLEAN COVER WITH DEMARCATION LAYER BELOW.
	EXISTING PAVING (TO REMAIN)	APPROXIMATELY 10-INCH THICK LAYER OF CONCRETE AND SUBBASE.
	NEW PAVING (REMOVE/REPLACE OR NEW)	MINIMUM OF 10-INCH THICK LAYER OF CONCRETE AND SUBBASE.
	NEW PAVING (REMOVE/REPLACE)	REMOVE, REGRADE, AND REPLACE EXISTING CONCRETE SIDEWALK TO MEET 6" HIGH NEW CURB.
	EXISTING MATURE TREES WITHIN PLANTING STRIPS	REMOVE 0-6" OF SOIL. PLACE DEMARCATION LAYER. CLEAN TOPSOIL AND COVER WITH 3-INCH THICK LAYER OF MULCH AND GROUND COVER. INSTALL 4' FENCE.
	NEW TREES AND/OR PLANTINGS WITHIN TREE PITS AND PLANTING STRIPS	GROUND COVER WITH 3-INCH THICK LAYER OF MULCH UNDERLAIN BY A MINIMUM 1-FOOT THICK LAYER OF CLEAN COVER WITH DEMARCATION LAYER BELOW.
	EXISTING MATURE TREES WITHIN TREE PITS	REMOVE 0-6" OF SOIL. PLACE DEMARCATION LAYER, CLEAN TOP SOIL AND COVER WITH 2-INCH THICK LAYER OF BONDED AGGREGATE OR PERMEABLE PAVERS.

- ACCESSIBLE STEEL BLEACHERS
- PROPOSED 8'-0" CLF ON CONC. CURB
- PROPOSED 12'-0" CLF ON CONC. CURB
- 2'-6" OR 4'-0" HT. STEEL BAR FENCE WITH PICKETS IN CONC. CURB
- 4/14 MISTING STATION
- DF
- ALL/71 DRINKING FOUNTAIN WITH BOTTLE FILLER
- ALL/27 1964 WORLD'S FAIR BENCH
- 5/25 PLAYER BENCH, 7'-0" LG. TYPE 'C' BACKLESS
- TR
- 5/14 PUBLIC SPACE RECEPTACLE BIN
- 4/21 BICYCLE RACK
- CB
- 1/2 CATCH BASIN
- DI
- X/X DROP INLET D-1
- AD
- X/X AREA DRAIN
- PROPOSED TREE
- EXISTING TREE TO REMAIN, (CRITICAL/ STRUCTURAL ROOT ZONE SHOWN) TYP.
- #/# DPR STANDARD DETAIL No. / DPR STANDARD DETAIL SHEET No.
- #/L-# CUSTOM DETAIL No. / CUSTOM DETAIL SHEET No.

NOTES:

1. REFER TO DETAIL AND CROSS SECTION SHEETS FOR MORE DETAIL REGARDING REMEDIAL COVER SYSTEM.
2. UTILITIES NOT SHOWN.
3. DRAWING SHALL BE USED FOR REMEDIAL WORK ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE.

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SEAL

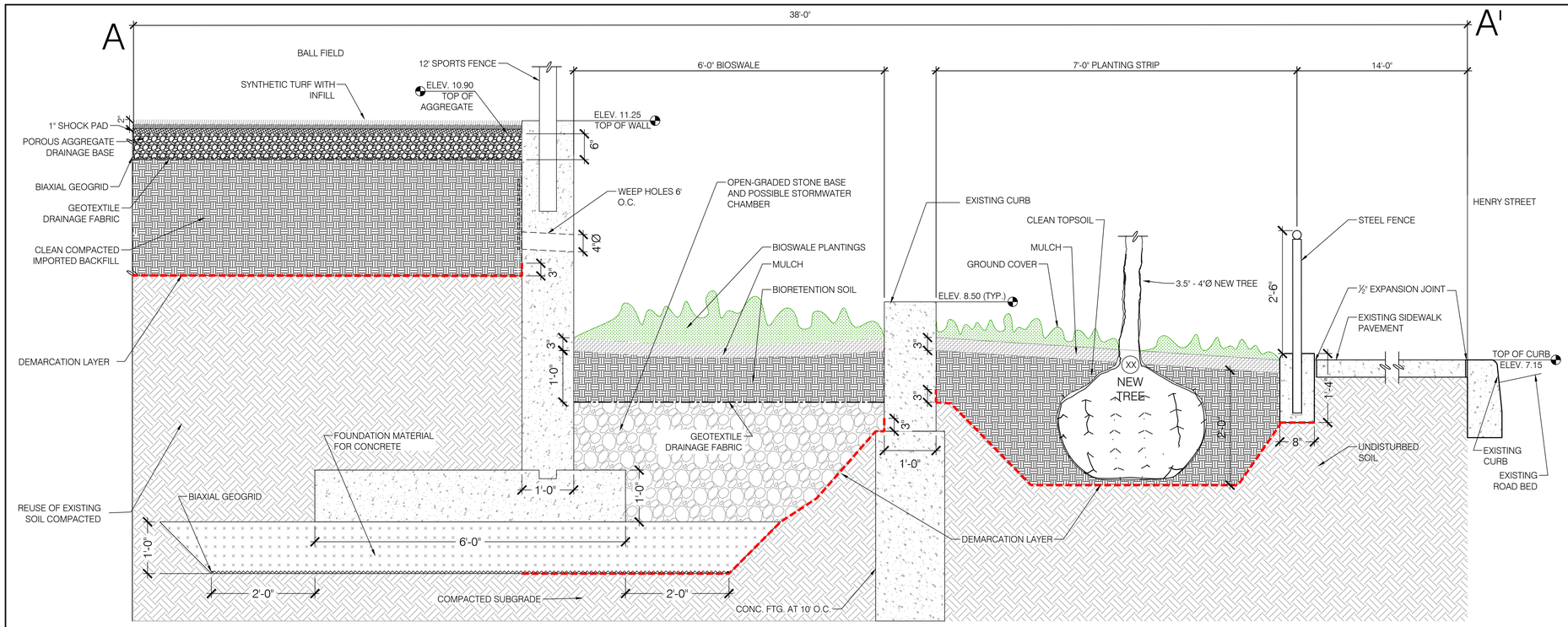
PROJECT TITLE
REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M

DRAWING TITLE
REMOVAL ACTION PLAN

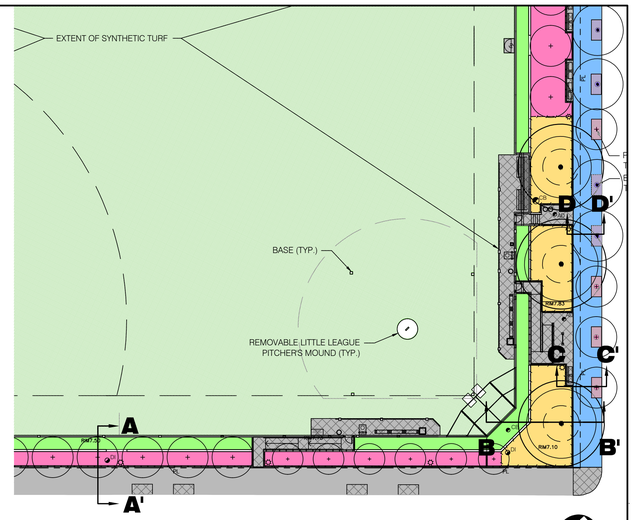
DESIGNED BY	DRAWN BY		CHECKED BY
JM/TRC	HD/TRC		JAMES PERONTO, P.E.
B-SCAN	SCALE 1"=20'-0"	DRAWING NO. 2	CONTRACT NO. B126-116M
	DATE 09/15/2016		

BLOCK 581

LOT 1

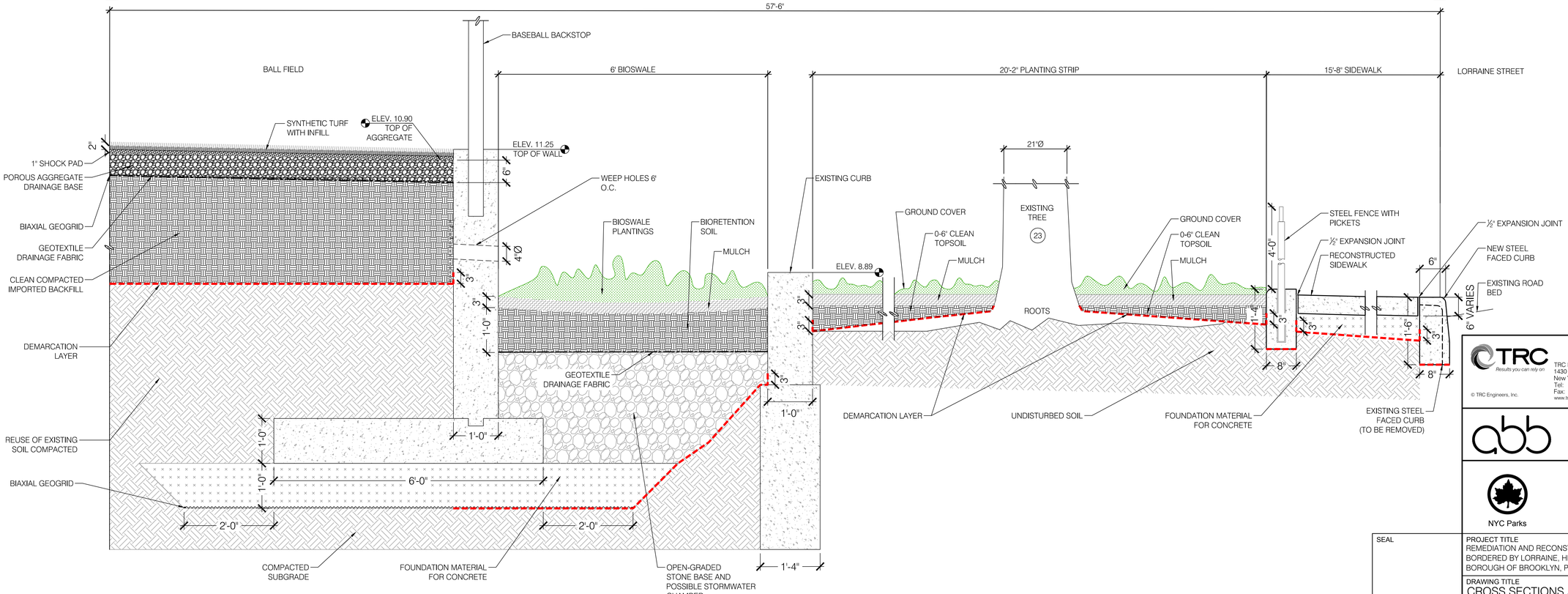


1 CROSS SECTION A-A'
SCALE: 1" = 1'-0"



CROSS SECTION LOCATION MAP

N.T.S.



2 CROSS SECTION B-B'
SCALE: 1" = 1'-0"

NOTES:

1. UTILITIES NOT SHOWN.
2. DRAWING SHALL BE USED FOR REMOVAL WORK ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE.
3. ELEVATIONS SHOWN IN FEET. DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

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SEAL

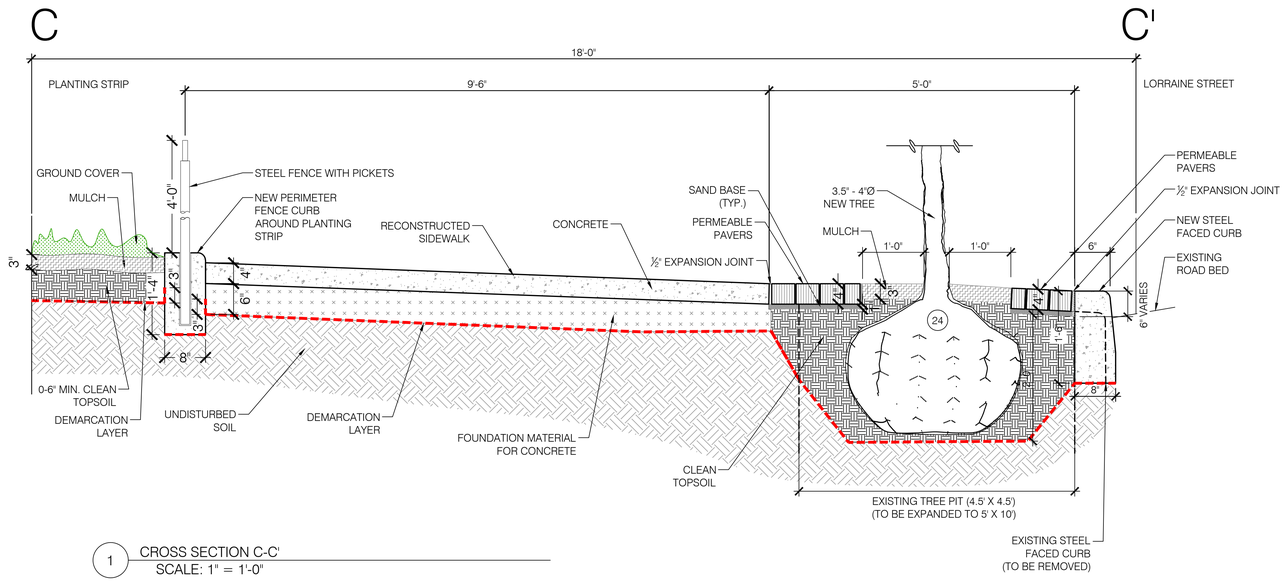
BLOCK 581

LOT 1

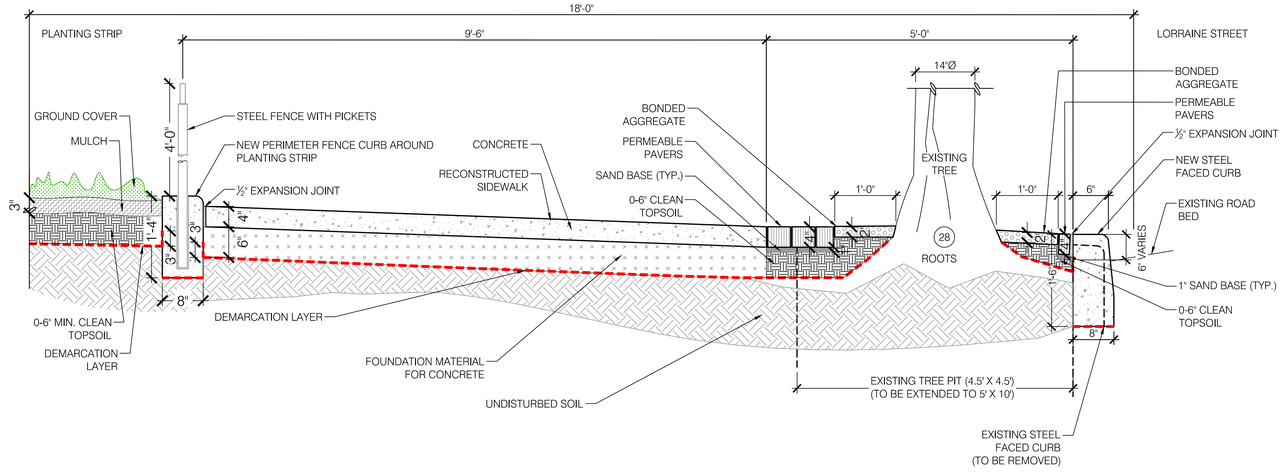
PROJECT TITLE
REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M

DRAWING TITLE
CROSS SECTIONS A-A' AND B-B'

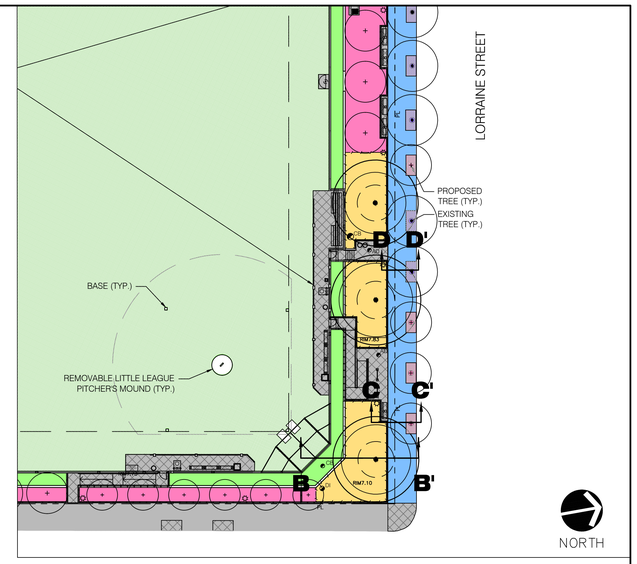
DESIGNED BY	DRAWN BY		CHECKED BY
JM/TRC	HD/TRC		JAMES PERONTO, P.E.
B-SCAN	SCALE 1"=1'-0"	DRAWING NO. 3	CONTRACT NO. B126-116M
	DATE 06/30/2016		



1 CROSS SECTION C-C'
SCALE: 1" = 1'-0"



2 CROSS SECTION D-D'
SCALE: 1" = 1'-0"



CROSS SECTION LOCATION MAP

N.T.S.

NOTES:

1. UTILITIES NOT SHOWN.
2. DRAWING SHALL BE USED FOR REMOVAL WORK ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE.
3. ELEVATIONS SHOWN IN FEET. DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

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BLOCK 581

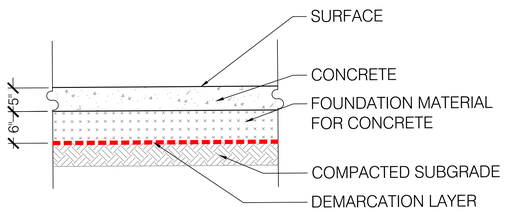
LOT 1

PROJECT TITLE
REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M

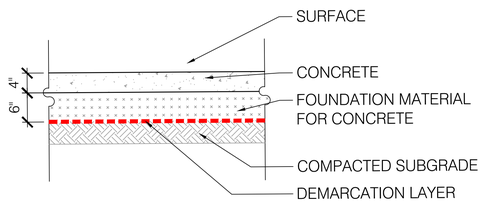
DRAWING TITLE
CROSS SECTIONS C-C' AND D-D'

DESIGNED BY	DRAWN BY		CHECKED BY
JM/TRC	HD/TRC		JAMES PERONTO, P.E.
B-SCAN	SCALE 1"=1'-0"	DRAWING NO. 4	CONTRACT NO. B126-116M
	DATE 06/30/2016		

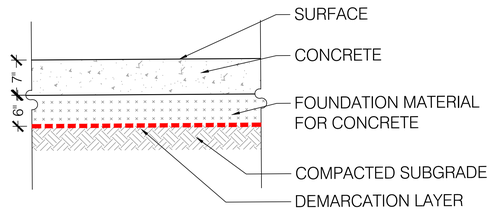
CONCRETE PAVED AREA DETAILS



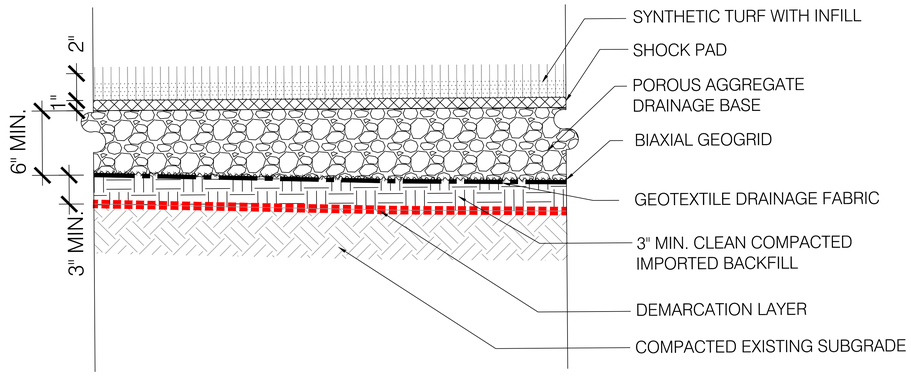
1 ON-SITE WALKWAY
NOT TO SCALE



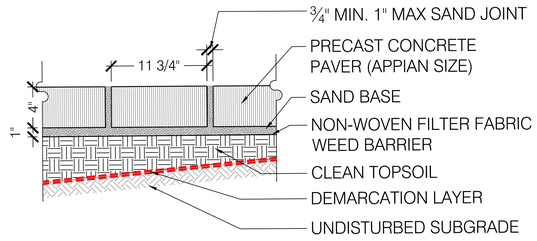
2 SIDEWALK, OUTSIDE DRIVEWAY AND CORNER QUADRANTS
NOT TO SCALE



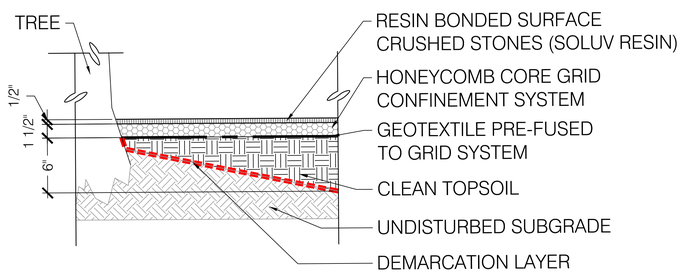
3 SIDEWALK, IN DRIVEWAY AND IN CORNER QUADRANTS
NOT TO SCALE



4 SYNTHETIC TURF WITH INFILL
NOT TO SCALE



5 PERMEABLE CONCRETE PAVERS FOR TREE PITS
NOT TO SCALE



6 RESIN BONDED AGGREGATE DETAIL
NOT TO SCALE

NOTES:

1. RESIN BONDED STONES: ¼" TO ⅜" OR AS PER SPECIFICATIONS.
2. HONEYCOMB GRID SYSTEM: 50-35 CORE GRAVEL SYSTEM FILLED WITH ¼" TO ⅜" STONE, WASHED WITH NO FINES.
3. GEOTEXTILE SHALL BE FUSED TO BOTTOM OF CORE SYSTEM, NOT INSTALLED SEPARATELY.

NOTES:

1. DRAWING SHALL BE USED FOR REMOVAL WORK ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE.

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NYC Parks

SEAL

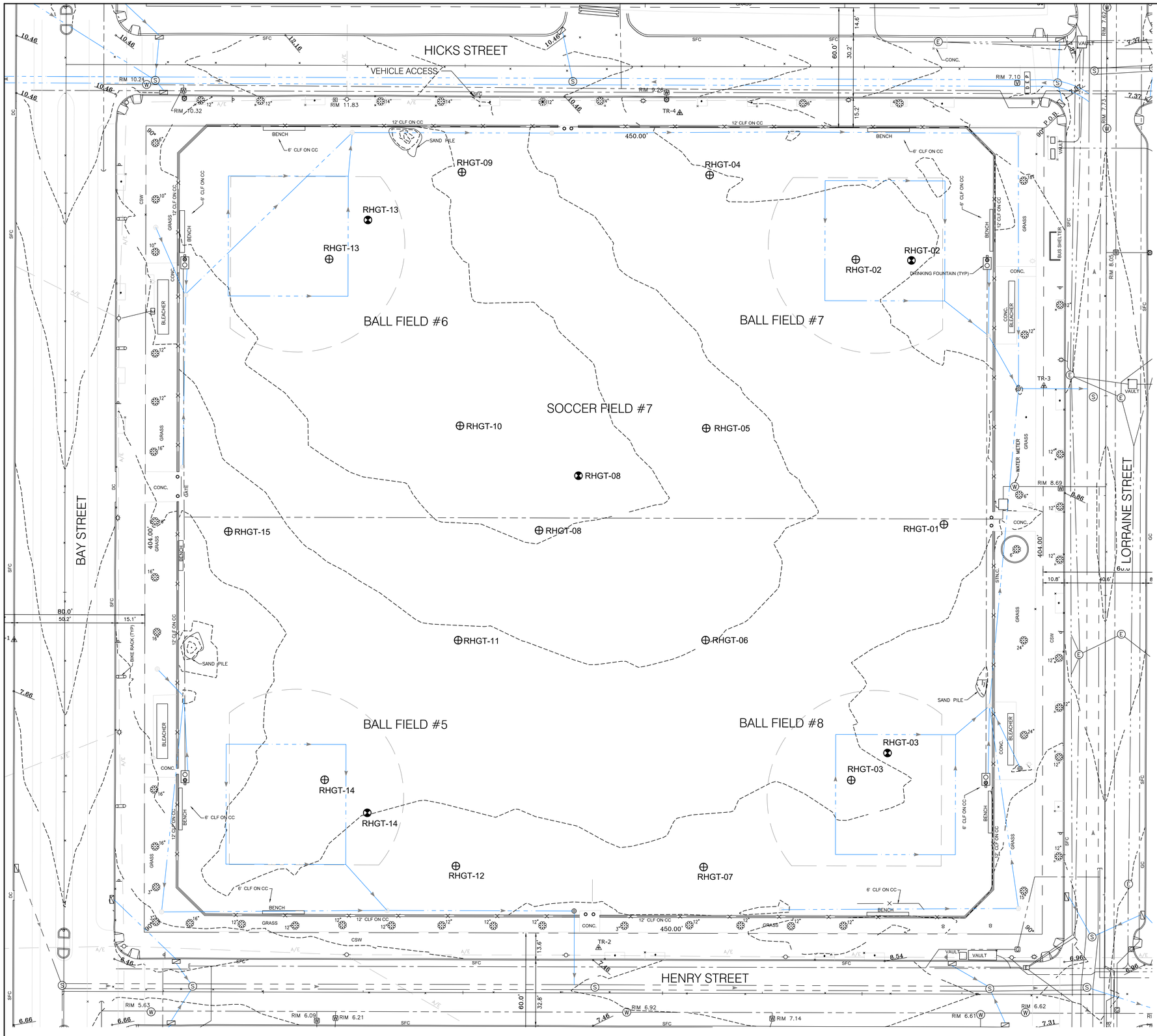
BLOCK 581

LOT 1

PROJECT TITLE
REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M

DRAWING TITLE
COVER SYSTEM DETAILS

DESIGNED BY	DRAWN BY		CHECKED BY
JM/TRC	HD/TRC		JAMES PERONTO, P.E.
B-SCAN	SCALE: N.T.S.	DRAWING NO.: 5	CONTRACT NO.: B126-116M
	DATE: 06/30/2016		



LEGEND (SYMBOLS NOT TO SCALE):

⊕ RHGT-□□	APPROXIMATE GEOTECHNICAL BORING LOCATION AND IDENTIFICATION NUMBER
⊕ RHGT-□□	APPROXIMATE PERMEABILITY TEST LOCATION AND IDENTIFICATION NUMBER

NOTES:

1. UTILITIES NOT SHOWN.
2. DRAWING SHALL BE USED FOR REMOVAL WORK ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE.
3. SURVEYED BY MUNOZ ENGINEERING, P.C. DATED ON MAY 4, 2016.
4. ELEVATIONS SHOWN HEREON REFER TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88).
5. SUBSURFACE UTILITY INFORMATION TAKEN FROM VARIOUS CITY MAPS AND PRIVATE UTILITY COMPANIES.
6. THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVE GROUND STRUCTURES, PARKS RECORD DRAWINGS AND CITY RECORD MAPS. LOCATION OF UNDERGROUND UTILITY / STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES / STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATION WAS MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES. BEFORE COMMENCING EXCAVATION, CONTRACTORS SHOULD CALL 1-800-272-4480 CODE RULE 53.

BORING LOCATION PLAN

SCALE: 1"=20'-0"

NORTH

0 5' 10' 20' 40'

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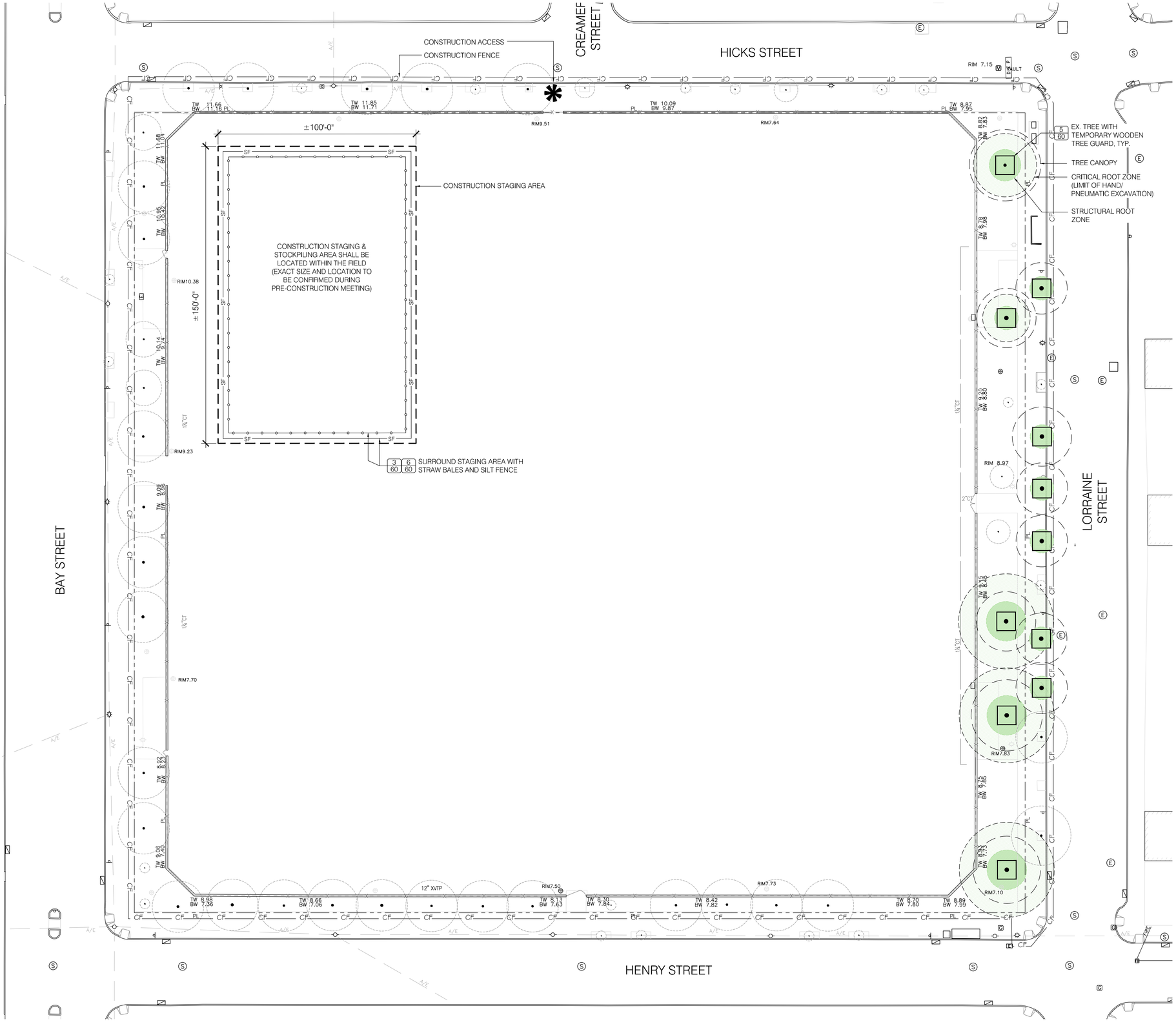
SEAL	PROJECT TITLE: REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M		
	DRAWING TITLE: BORING LOCATION PLAN		
	DESIGNED BY: JM/TRC	DRAWN BY: HD/TRC	CHECKED BY: JAMES PERONTO, P.E.
	B-SCAN	SCALE: 1"=20'-0"	DRAWING NO.: 6
		DATE: 06/30/2016	CONTRACT NO.: B126-116M
BLOCK: 581			
LOT: 1			



LEGEND

- PROPERTY LINE
- EX. SEWER MANHOLE
- EX. ELECTRIC MANHOLE
- EX. GAS MANHOLE
- EX. TELEPHONE MANHOLE
- EX. LIGHT POLE
- EX. SIGN
- EX. GAS VALVE
- EX. WATER VALVE
- EX. DRAINAGE STRUCTURE
- EX. HYDRANT
- CONSTRUCTION STAGING AREA
- CONSTRUCTION FENCE
- EXISTING TREE TO BE REMOVED
- 5/60 EX. TREE WITH TEMPORARY WOODEN TREE GUARD, TYP.
- TREE CANOPY
- CRITICAL ROOT ZONE (LIMIT OF HAND/ PNEUMATIC EXCAVATION)
- STRUCTURAL ROOT ZONE
- #/# DPR STANDARD DETAIL No. / DPR STANDARD DETAIL SHEET No.
- #/L-# CUSTOM DETAIL No. / CUSTOM DETAIL SHEET No.

NOTES:

1. THE SIZE AND POSITION OF THE STAGING AREA WILL CHANGE DURING CONSTRUCTION TO ACCOMMODATE SITE ACTIVITIES.
2. STREET CLOSURES MAY BE NECESSARY TO ALLOW STAGING OF EQUIPMENT AND MATERIALS.

NORTH

0 5' 10' 20' 40'

NOT FOR CONSTRUCTION

CONSTRUCTION STAGING PLAN

SCALE: 1"=20'-0"

TRC Engineers, Inc.
1430 Broadway, 10th Floor
New York, NY 10018
Tel: 212-221-7822
Fax: 212-221-7840
www.trcsolutions.com

Abel Bainnson Butz, LLP
LANDSCAPE ARCHITECTS I SITE PLANNERS

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

NYC Parks

SEAL

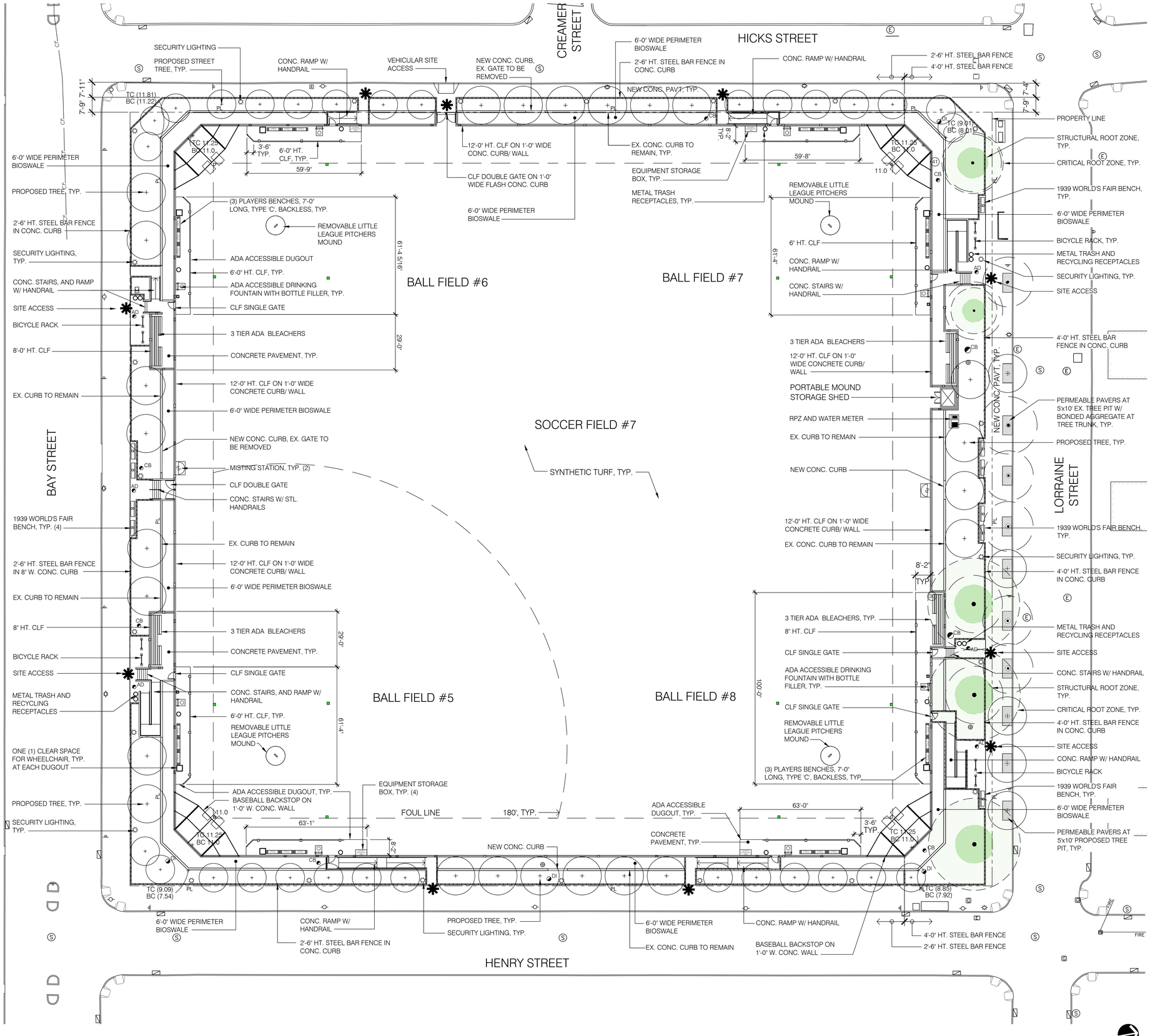
BLOCK 581

LOT 1

PROJECT TITLE
REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M

DRAWING TITLE
CONSTRUCTION STAGING PLAN

DESIGNED BY	DRAWN BY		CHECKED BY
ABB	ABB		JOHN BUTZ, RLA
B-SCAN	SCALE 1"=20'-0"	DRAWING NO. L100.00	CONTRACT NO. B126-116M
	DATE 06/30/2016		



SITE COMPONENTS

SITE AMENITIES

- ADA ACCESSIBLE DRINKING FOUNTAIN W/ BOTTLE FILLER (8)
- GROUND HYDRANT (4)
- MISTING STATION (2)
- METAL TRASH RECEPTACLES (1 PER ENTRANCE AND PER DUGOUT)
- METAL RECYCLING RECEPTACLES (1 PER ENTRANCE)
- 3 TIER ADA BLEACHER, 52 SEATS (4)
- PLAYER BENCHES, 7'-0" LONG, BACKLESS, TYPE 'C' (3 PER DUGOUT)
- BICYCLE RACK, TYP. (8)
- SECURITY LIGHTING
- EQUIPMENT STORAGE BOX (4)
- PORTABLE MOUND STORAGE SHED

FENCE WORK

- 12'-0" HT. CHAIN LINK FENCE ON 1'-0" W. CONC. CURB/ WALL
- CHAIN LINK FENCE DOUBLE GATE AT FIELD ACCESS
- 8'-0" HT. CHAIN LINK FENCE AT DUGOUT
- LOWER HORIZONTAL RAIL (24" HT.) AT PERIMETER FENCE
- BASEBALL BACKSTOP ON CONCRETE CURB
- STEEL HANDRAILS AT STAIRS AND ADA RAMPS
- 2'-6" HT. STEEL BAR FENCE AT PLANTING BEDS ON BAY, HENRY AND LORRAINE STREETS
- VEHICULAR ACCESS AND GATE ON HICKS STREET
- TREE GRATES AT STREET TREES

DRAINAGE WORK

- CLEAR EXISTING LINES & STRUCTURES TO STREET CONNECTION
- FIELD DRAINAGE PANELS, DETENTION/ RETENTION AS REQUIRED
- BIOSWALE

PLANTING

- REMOVE AND TRANSPLANT STREET TREES AS PER APPROVED TREE INVENTORY
- REMOVE 6" OF TOPSOIL AT EXISTING TREES, AND 12" AT ALL OTHER LOCATIONS WITHIN PLANTING BEDS
- PRUNE/FERTILIZE EXISTING TREES

FIELD WORK

- REMOVE ORGANIC LAYER (6"-8" OF TOPSOIL)
- PROVIDE DEMARCATION BETWEEN EX. SOIL AND NEW FILL
- INFILL SYNTHETIC TURF ON DRAINAGE/ SHOCK PAD (COLOR: GREEN) WITH PERIMETER NAILER (RPL)
- SOFTBALL PAINTED FIELD LINES
- ADA ACCESSIBLE DUGOUTS
- CONCRETE PAVEMENT AT DUGOUTS
- CONCRETE STAIRS AND RAMPS TO ALL FIELDS
- MAIN PEDESTRIAN ACCESS, CONCRETE STAIRS @ BAY STREET

LEGEND

- PROPERTY LINE
- EX. SEWER MANHOLE
- EX. ELECTRIC MANHOLE
- EX. GAS MANHOLE
- EX. TELEPHONE MANHOLE
- EX. LIGHT POLE
- EX. SIGN
- EX. GAS VALVE
- EX. WATER VALVE
- EX. DRAINAGE STRUCTURE
- EX. HYDRANT
- ACCESSIBLE STEEL BLEACHERS
- PROPOSED 8'-0" CLF ON CONC. CURB
- PROPOSED 12'-0" CLF ON CONC. CURB
- 2'-6" OR 4'-0" HT. STEEL BAR FENCE IN CONC. CURB
- MISTING STATION
- DRINKING FOUNTAIN WITH BOTTLE FILLER
- 1964 WORLD'S FAIR BENCH
- PLAYER BENCH, 7'-0" LG. TYPE 'C' BACKLESS
- PUBLIC SPACE RECEPTACLE BIN
- BICYCLE RACK
- CATCH BASIN
- DROP INLET D-1
- AREA DRAIN
- PROPOSED TREE
- EXISTING TREE ON LORRAINE STREET TO REMAIN
- EXISTING TREE TO REMAIN, (CRITICAL/ STRUCTURAL ROOT ZONE SHOWN) TYP.
- DPR STANDARD DETAIL No. / DPR STANDARD DETAIL SHEET No.
- CUSTOM DETAIL No. / CUSTOM DETAIL SHEET No.

MATERIALS AND LAYOUT PLAN

SCALE: 1"=20'-0"

NORTH

0 5' 10' 20' 40'

NOT FOR CONSTRUCTION

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NYC Parks

SEAL

BLOCK 581

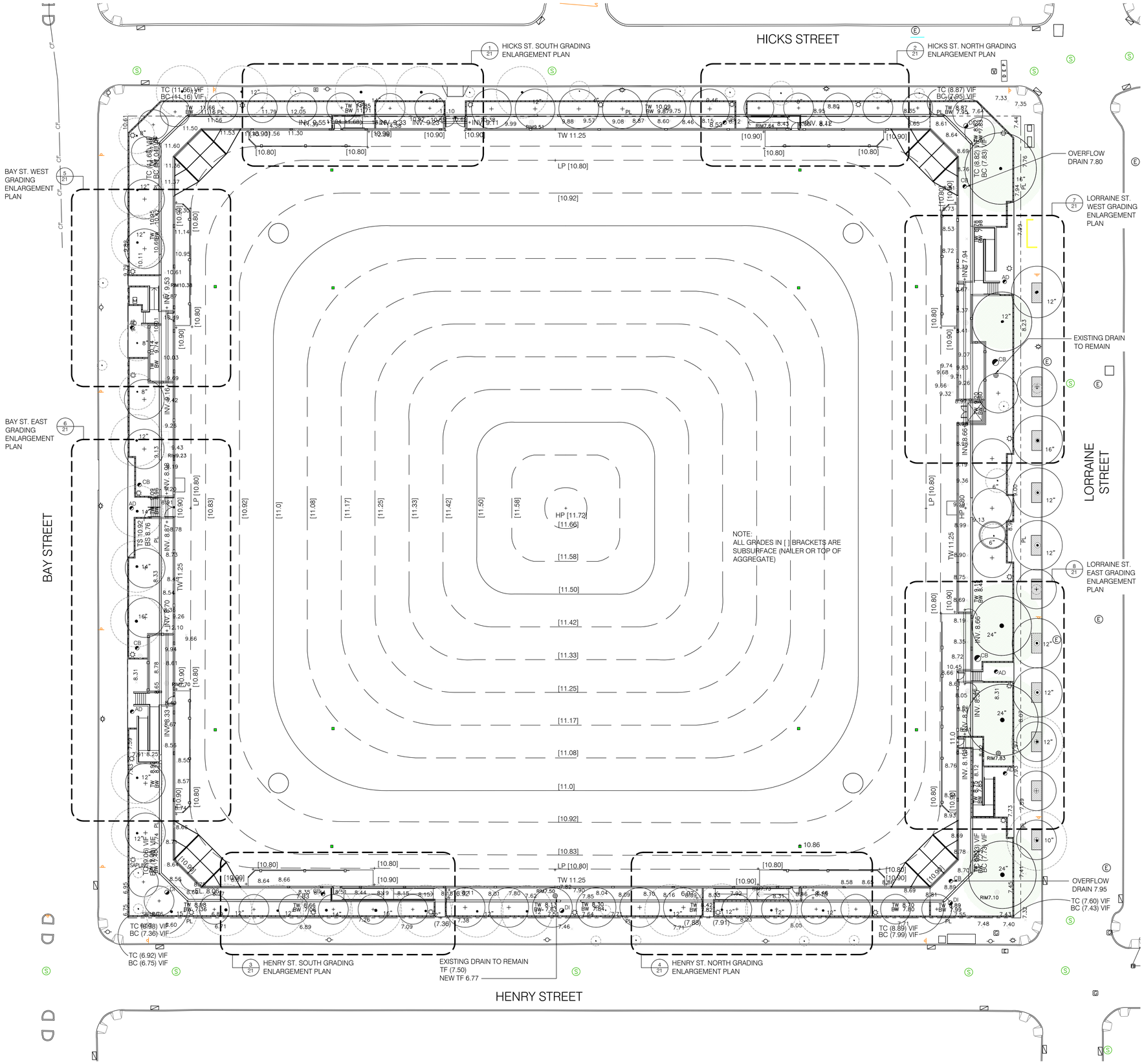
LOT 1

PROJECT TITLE
REMEDIATION AND RECONSTRUCTION OF BALL FIELDS 5-8 IN RED HOOK PARK, BORDERED BY LORRAINE, HICKS, BAY, AND HENRY STREETS, BOROUGH OF BROOKLYN, PROJECT NO: B126-116M

DRAWING TITLE
MATERIALS AND LAYOUT PLAN

DESIGNED BY	DRAWN BY	CHECKED BY
ABB	ABB	JOHN BUTZ, RLA

B-SCAN	SCALE	DRAWING NO.	CONTRACT NO.
	1"=20'-0"	L200.00	B126-116M
	DATE 06/30/2016		



LEGEND

PL	PROPERTY LINE
CLL	CONTRACT LIMIT LINE
(D) (S)	EX. SEWER MANHOLE
(E)	EX. ELECTRIC MANHOLE
(G)	EX. GAS MANHOLE
(T)	EX. TELEPHONE MANHOLE
	EX. LIGHT POLE
	EX. SIGN
(G) [G]	EX. GAS VALVE
(W) [W]	EX. WATER VALVE
	EX. DRAINAGE STRUCTURE
	EX. HYDRANT
[11.0]	PROPOSED MAJOR CONTOUR SUBSURFACE
[10.5]	PROPOSED INTERMEDIATE CONTOUR SUBSURFACE
+ 13.05	PROPOSED SPOT ELEVATION
+ (8.01)	EX. SPOT ELEVATION
+ HP	HIGH POINT
+ LP	LOW POINT
+ TC 7.23 BC 6.80	TOP & BOTTOM OF CURB
+ TW 7.23 BW 6.80	TOP & BOTTOM OF WALL
+ TS 7.23 BS 6.80	TOP & BOTTOM OF STAIR
+ TF 7.23	TOP OF FRAME

GRADING PLAN

SCALE: 1"=20'-0"

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SEAL	
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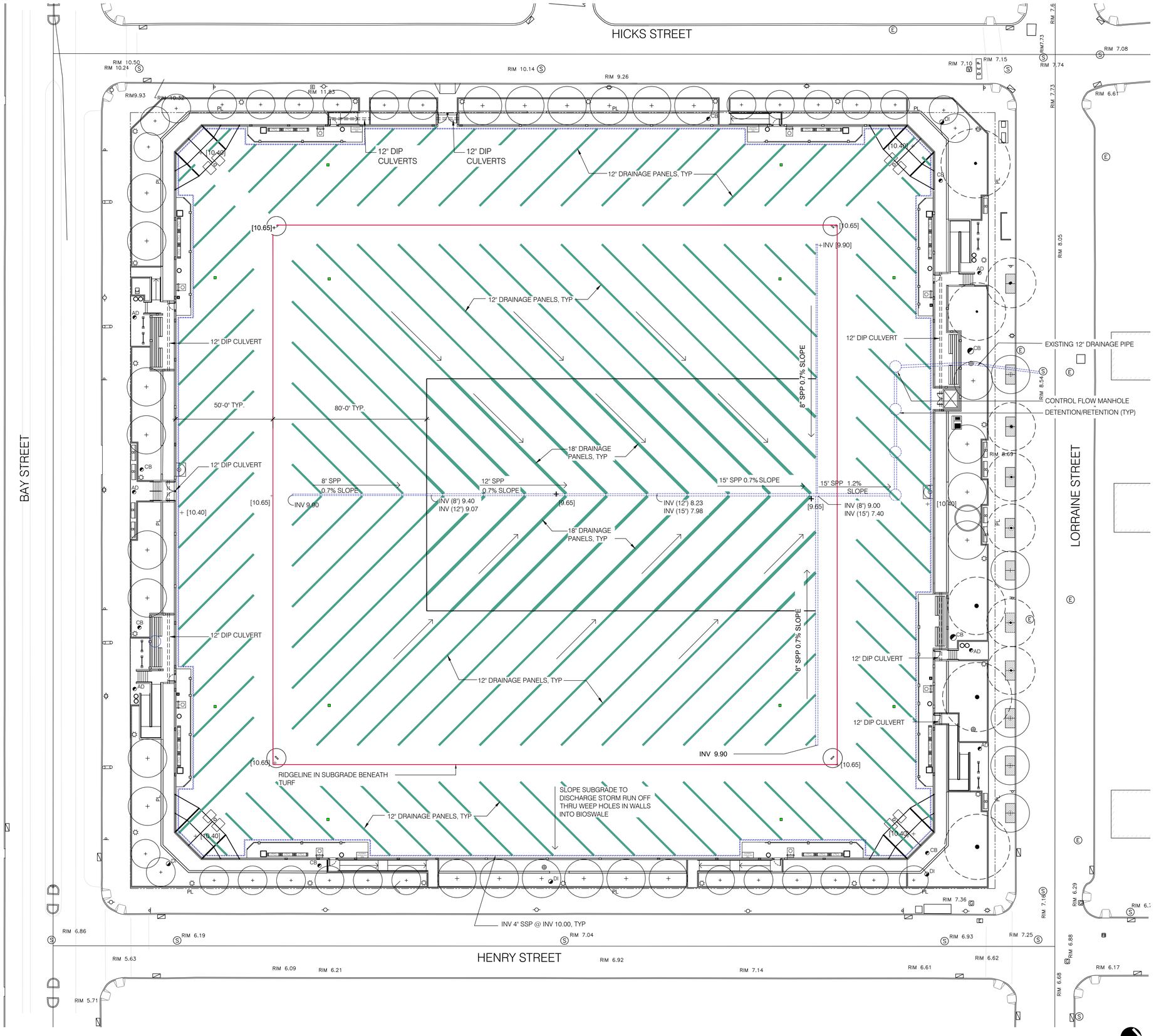
DRAWING TITLE	GRADING PLAN
DESIGNED BY: ABB	DRAWN BY: ABB
CHECKED BY: JOHN BUTZ, RLA	
B-SCAN	SCALE: 1"=20'-0"
DRAWING NO.: L300.00	CONTRACT NO.: B126-116M
BLOCK: 581	DATE: 06/30/16
LOT: 1	



LEGEND

- PL — PROPERTY LINE
- D S — EX. SEWER MANHOLE
- E — EX. ELECTRIC MANHOLE
- G — EX. GAS MANHOLE
- T — EX. TELEPHONE MANHOLE
- EX. LIGHT POLE
- EX. SIGN
- G G — EX. GAS VALVE
- W W — EX. WATER VALVE
- EX. DRAINAGE STRUCTURE
- EX. HYDRANT
- CB — CATCH BASIN C-1
- DI — DROP INLET D-1
- AD — AREA DRAIN
- DETENTION/RETENTION
- DUCTILE IRON PIPE CULVERT
- 8" HDPE — HIGH DENSITY POLYTEHYLENE PIPE
- 8" SPP — SLOTTED POLYTEHYLENE PIPE
- DRAINAGE PANEL
- SUBGRADE RIDGELINE

NORTH
0 5' 10' 20' 40'

FIELD DRAINAGE PLAN

SCALE: 1"=20'-0"

NOT FOR CONSTRUCTION

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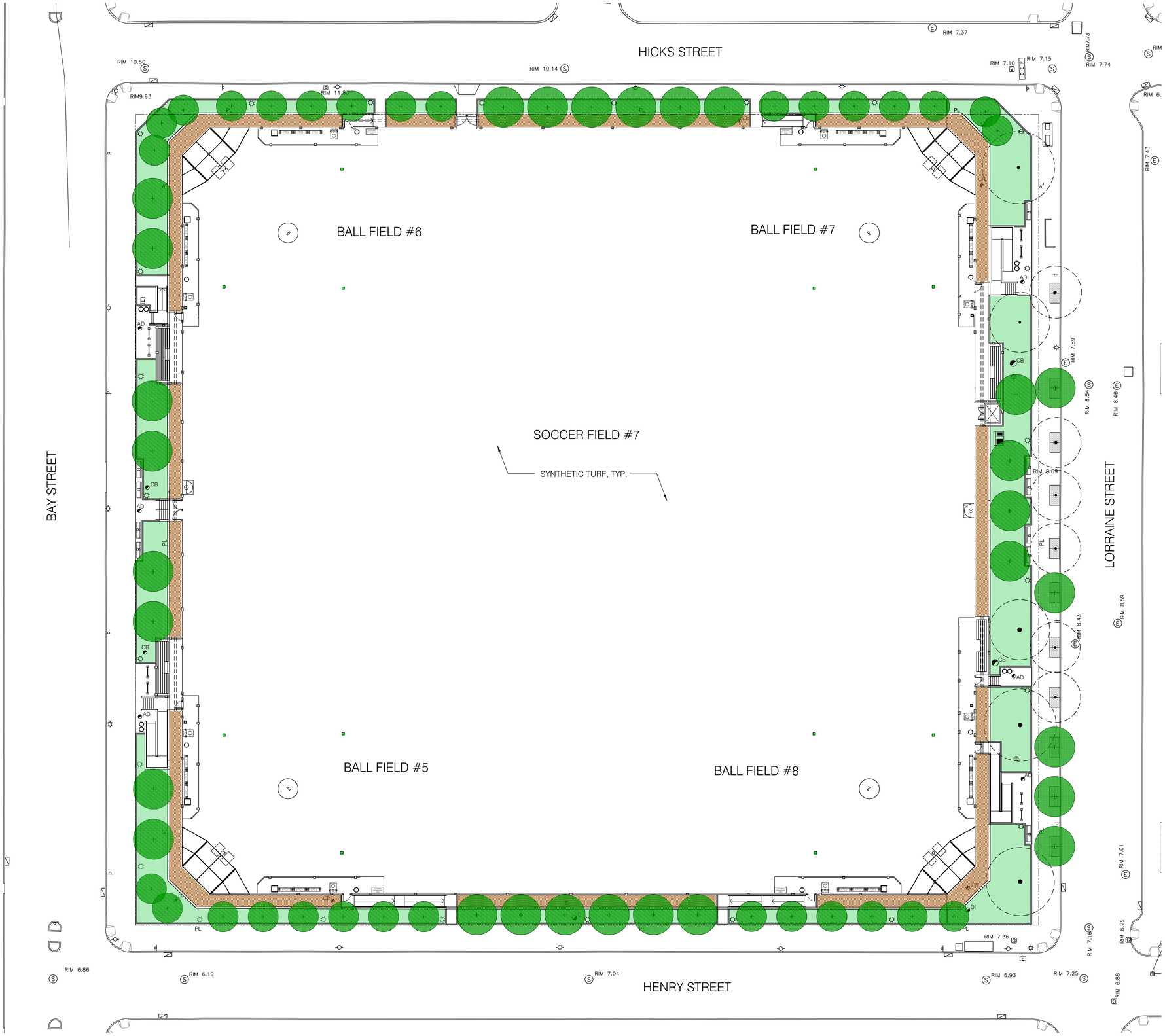
DRAWING TITLE
FIELD DRAINAGE PLAN

DESIGNED BY	DRAWN BY		CHECKED BY
ABB	ABB		JOHN BUTZ, RLA
B-SCAN	SCALE 1"=20'-0"	DRAWING NO. L400.00	CONTRACT NO. B126-116M
	DATE 06/30/2016		

BLOCK 581
LOT 1



LEGEND

- PL — PROPERTY LINE
- BIOSWALE AREA - 7228 SF.: 60% SHRUBS AND 40% PERENNIALS
- PLANTING STRIP AREAS - 16438 SF.: 30% SHRUBS AND 70 % GROUNDCOVER
- EXISTING TREE TO REMAIN
- PROPOSED TREE

NORTH

0 5' 10' 20' 40'

NOT FOR CONSTRUCTION

PLANTING PLAN

SCALE: 1"=20'-0"

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DRAWING TITLE
PLANTING PLAN

DESIGNED BY	DRAWN BY		CHECKED BY
ABB	ABB		JOHN BUTZ, RLA
B-SCAN	SCALE 1"=20'-0"	DRAWING NO. L500.00	CONTRACT NO. B126-116M
	DATE 06/30/2016		

BLOCK 581

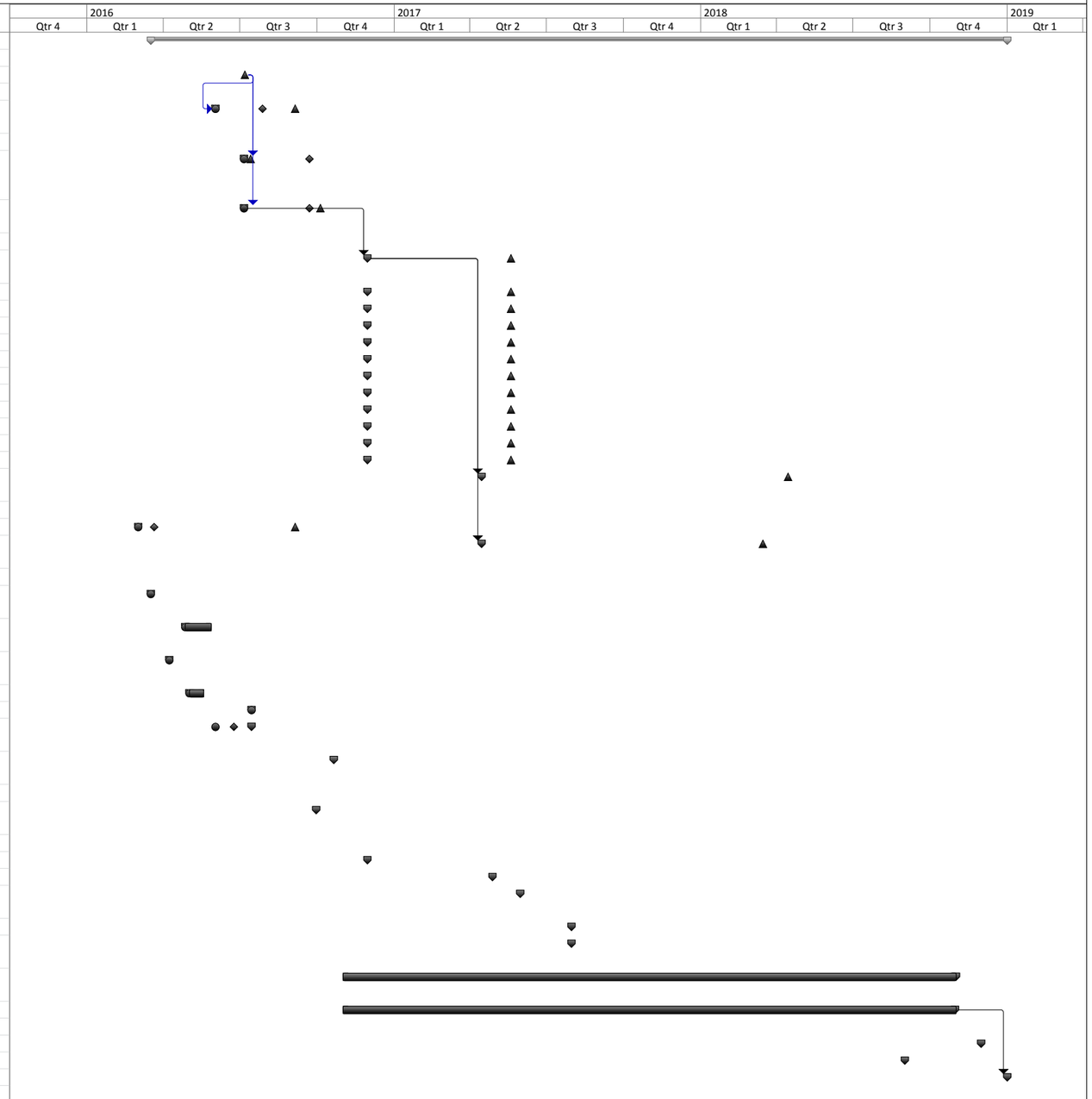
LOT 1

APPENDIX A

REMOVAL ACTION WORK PLAN SCHEDULE

Red Hook Ball Fields 5, 6, 7, and 8
Project Schedule

ID	Task Name	EPA Consent Order Timeframe	Consent Order Due Date	Project Due Date	DPR Submittal Date	EPA Approval Date
0	**RAWP Schedule 09.27.16**					
1	**Consent Order**					
2	Effective Date of the Order		7/7/16	NA	NA	NA
3	**Project Management Plan**					
4	Submission of Project Management Plan to EPA for Review	60 days after the Effective Date of the Order	9/5/16	6/2/16	6/2/16	7/28/16
5	**Interim Design Plan**					
6	Interim Remedial Measures (inspection and maintenance schedule, inspection report and checklist, contingency plan)	7 days after the Effective Date of the Order (will be included in the Interim Design Plan)	7/14/16	7/6/16	7/6/16	9/22/16
7	Submit Interim Design Plan including RAWP conceptual approach and schedule	90 days after the Effective Date of the Order	10/5/16	7/6/16	7/6/16	9/22/16
8	**Design and Implementation Plan**					
9	**Submit Design and Implementation Plan to EPA**	**240 days after EPA approval of the Interim Design Plan (Estimated EPA Approval on 6/19/17)**	**5/20/17**	**11/30/16**	**NA**	**NA**
10	Specifications		5/20/17	11/30/16	NA	NA
11	Removal Action Design		5/20/17	11/30/16	NA	NA
12	Restoration Design		5/20/17	11/30/16	NA	NA
13	Construction QA/QC Plan		5/20/17	11/30/16	NA	NA
14	Construction Schedule		5/20/17	11/30/16	NA	NA
15	Equipment and Materials Plan		5/20/17	11/30/16	NA	NA
16	Decontamination and Waste Disposal Procedures		5/20/17	11/30/16	NA	NA
17	Site Security Plan		5/20/17	11/30/16	NA	NA
18	Traffic Control Plan		5/20/17	11/30/16	NA	NA
19	Environmental Monitoring Plan		5/20/17	11/30/16	NA	NA
20	Waste Transportation and Disposal Plan		5/20/17	11/30/16	NA	NA
21	Submit Construction Plan for Ball Fields 5-8	Within 300 days of EPA approval of the Design and Implementation Plan	4/15/18	4/15/17	NA	NA
22	**Health and Safety Plan**					
23	Submit Design Phase Health and Safety Plan to EPA	60 days after the Effective Date of the Order	9/5/16	3/2/16	3/2/16	3/21/16
24	Submit Construction Phase Health and Safety Plan to EPA	270 Days after approval of Design and Implementation Plan (August 2017) and 30 days prior to the Construction Plan	3/16/18	4/15/17	NA	NA
25	**Field Design**					
26	Submit Schematic Design to DPR for In-house Design Review	March 2016	NA	3/17/16	3/17/16	NA
27	Approval of Schematic Design by DPR Commissioner and Community Board	April 2016	NA	4/27/16	4/27/16	NA
28	Submit Schematic Design to PDC for Preliminary Approval	April 2016	NA	4/8/16	4/8/16	NA
29	Preliminary Approval of Schematic Design by PDC	May 2016	NA	5/2/16	5/2/16	NA
30	Submit 50% drawings for review by DPR	June 2016	NA	7/15/16	7/15/16	NA
31	Submit 50% drawings (included in the Interim Design Plan) for review by EPA	June 2016	NA	7/15/16	6/2/16	6/24/16
32	Submit 90% Contract Drawings to PDC for Final Approval	September 2016	NA	10/21/16	NA	NA
33	**Permits**					
34	Submit Permit Applications/Drawings to DEP/DOB, etc. for Approval	August 2016	NA	9/30/16	NA	NA
35	**Construction**					
36	Transmit Contract to DPR Legal/City for Review	November 2016	NA	11/30/16	NA	NA
37	Contract Approved by DPR Legal/City - Out to Bid	April 2017	NA	4/28/17	NA	NA
38	Contract Awarded to Contractor; Submit contract for registration with Comptroller	May 2017	NA	5/31/17	NA	NA
39	Contract Registered with Comptroller	July 2017	NA	7/31/17	NA	NA
40	Contractor Mobilization of Equipment and Personnel and Construction Commencement	July 2017 - The Construction Plan must be approved by EPA prior to construction commencement	NA	7/31/17	NA	NA
41	Monthly Progress Reports	Date of Approval of the Removal Action Work Plan until issuance of Notice of Completion of Work	NA	11/1/18	NA	NA
42	Construction Completion	October 2018	NA	10/31/18	NA	NA
43	**Final Reports**					
44	Construction Completion Report	Upon completion of construction (October 2018)	NA	12/1/18	NA	NA
45	Post-Removal Site Control Site Management Plan (SMP)	60 days prior to completion of construction (October 2018)	NA	9/1/18	NA	NA
46	Final Report	60 days after completion of all work	NA	1/1/19	NA	NA
47	**Quality Assurance Project Plan**					
48	Submit Quality Assurance Project Plan to DPR	Prior to sampling activities	NA	NA	NA	NA



Project: RAWP Schedule 09.27.16
Date: 9/27/16

Project Due Date | EPA Approval Date | DPR Submittal Date | Consent Order Due Date

(1)Schedule assumes 30 days between DPR submittal and EPA approval of each plan
NA - Not Available

APPENDIX B

INSPECTION CHECKLIST AND MAINTENANCE SCHEDULE AND TEMPLATE REPORT

RED HOOK BALL FIELDS 5 THROUGH 8

MONTHLY INSPECTION OF INTERIM REMOVAL MEASURES

REPORT DATE	
INSPECTION DATE	
FOR MONTHLY PERIOD OF	
NAME, TITLE, AND PHONE NUMBER OF PERSON COMPLETING REPORT	

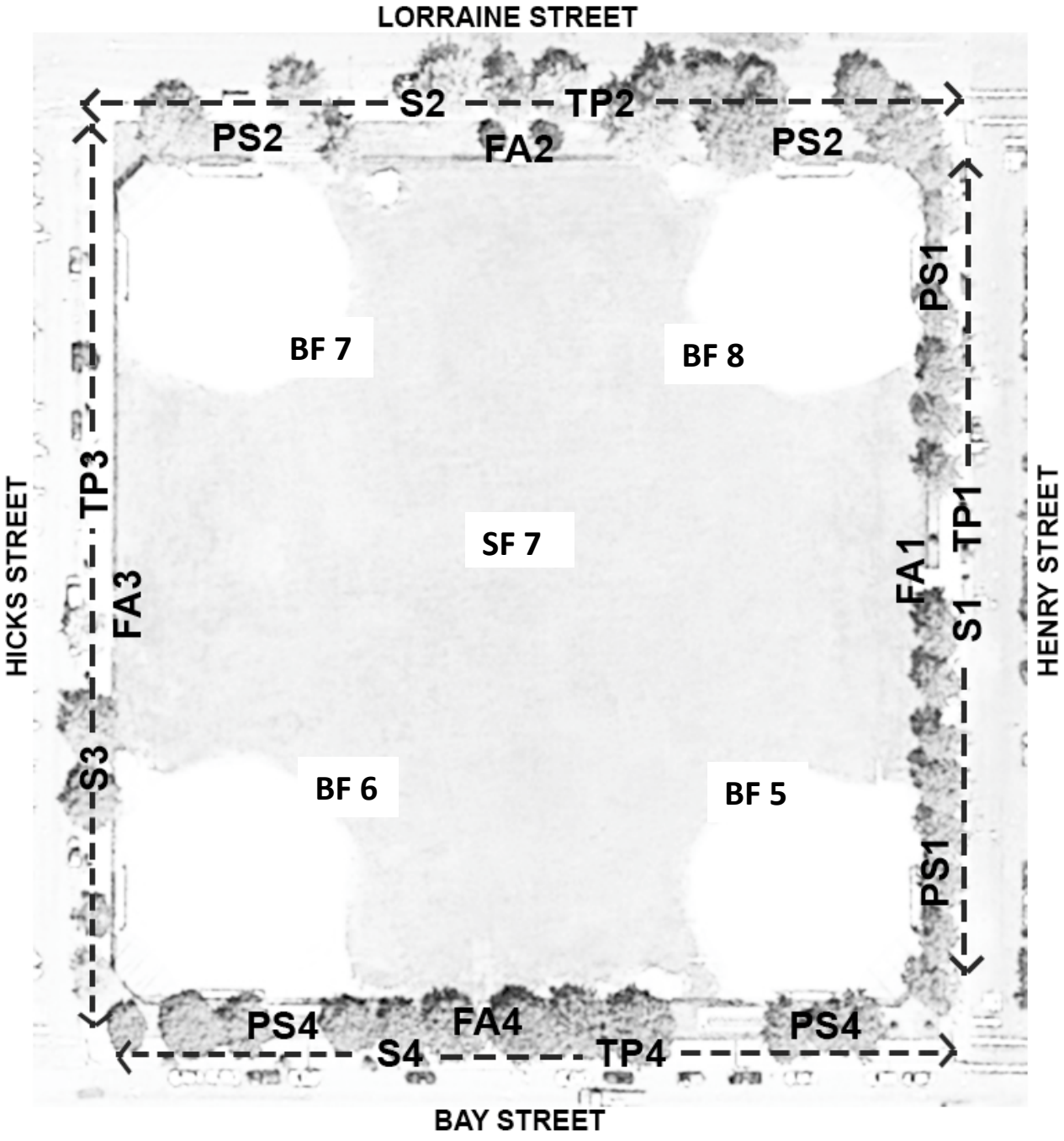
LOCATION ON MAP	LOCATION	CONDITIONS		NOTES/ ACTION TAKEN AND DATE
S1	SIDEWALK – HENRY ST.	ANY AREAS OF BROKEN PAVEMENT WHERE SOIL IS EXPOSED? YES ☐ NO ☐		
TP1	TREES PITS – HENRY ST.	ARE THERE SEVERAL INCHES OF WOODCHIP COVERING? YES ☐ NO ☐	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
PS1	PLANTING STRIPS – HENRY ST.	IS THE RANGE FENCE IN PLACE AND IN GOOD CONDITION? YES ☐ NO ☐	ARE THERE SEVERAL INCHES OF WOODCHIP COVERING? YES ☐ NO ☐	
		ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐		
FA1	FIELD ACCESS – HENRY ST.	ARE THE GATES LOCKED? YES ☐ NO ☐	IS SIGNAGE IN PLACE, IN GOOD CONDITION, AND CLEARLY LEGIBLE? YES ☐ NO ☐	
S2	SIDEWALK – LORRAINE ST.	ARE THERE ANY AREAS OF BROKEN PAVEMENT WHERE SOIL IS EXPOSED? YES ☐ NO ☐		
TP2	TREES PITS – LORRAINE ST.	ARE THERE SEVERAL INCHES OF WOODCHIP COVERING? YES ☐ NO ☐	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	

LOCATION ON MAP	LOCATION	CONDITIONS		NOTES/ ACTION TAKEN AND DATE
PS2	PLANTING STRIPS – LORRAINE ST.	IS THE RANGE FENCE IN PLACE AND IN GOOD CONDITION? YES ☐ NO ☐	ARE THERE SEVERAL INCHES OF WOODCHIP COVERING? YES ☐ NO ☐	
		ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐		
FA3	FIELD ACCESS – LORRAINE ST.	ARE THE GATES LOCKED? YES ☐ NO ☐	IS SIGNAGE IN PLACE, IN GOOD CONDITION, AND CLEARLY LEGIBLE? YES ☐ NO ☐	
S3	SIDEWALK – HICKS ST.	ARE THERE ANY AREAS OF BROKEN PAVEMENT WHERE SOIL IS EXPOSED? YES ☐ NO ☐		
TP3	TREES PITS – HICKS ST.	ARE THERE SEVERAL INCHES OF WOODCHIP COVERING? YES ☐ NO ☐	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
FA3	FIELD ACCESS – HICKS ST.	ARE THE GATES LOCKED? YES ☐ NO ☐	IS SIGNAGE IN PLACE, IN GOOD CONDITION, AND CLEARLY LEGIBLE? YES ☐ NO ☐	
S4	SIDEWALK – BAY ST.	ARE THERE ANY AREAS OF BROKEN PAVEMENT WHERE SOIL IS EXPOSED? YES ☐ NO ☐		
TP4	TREES PITS – BAY ST.	ARE THERE SEVERAL INCHES OF WOODCHIP COVERING? YES ☐ NO ☐	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
PS4	PLANTING STRIPS – BAY ST.	IS THE RANGE FENCE IN PLACE AND IN GOOD CONDITION? YES ☐ NO ☐	ARE THERE SEVERAL INCHES OF WOODCHIP COVERING? YES ☐ NO ☐	
		ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐		
FA4	FIELD ACCESS – BAY ST.	ARE THE GATES LOCKED? YES ☐ NO ☐	IS SIGNAGE IN PLACE, IN GOOD CONDITION, AND CLEARLY LEGIBLE? YES ☐ NO ☐	

LOCATION ON MAP	LOCATION	CONDITIONS	NOTES/ ACTION TAKEN AND DATE
BF5	BALL FIELD 5	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
BF6	BALL FIELD 6	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
BF7	BALL FIELD 7	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
BF8	BALL FIELD 8	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
F7	SOCCER FIELD 7	ARE THERE ANY AREAS OF EXPOSED SOIL VISIBLE? YES ☐ NO ☐	
	PLANNED REPAIRS OR OTHER SITE ACTIVITIES	ARE ANY ACTIVITIES REQUIRING NEW EXCAVATIONS OR SOIL DISTURBANCE PLANNED? YES ☐ NO ☐	
		IS MOWING OF VEGETATIVE COVER FOR THE PURPOSE OF SITE MAINTENANCE PLANNED? YES ☐ NO ☐	

RED HOOK BALL FIELDS 5 THROUGH 8

SITE INSPECTION MAP



APPENDIX C

CONTINGENCY PLAN

RED HOOK BALL FIELDS 5 - 8

CONTINGENCY PLAN

The following Contingency Plan will be enacted following an emergency at the Site (e.g., a storm knocks over a tree exposing contaminated soil, drought conditions allow for windblown soil, vandalism or unauthorized entry by the public, etc.) that causes or threatens to cause a release of waste material on, at, or from the Site that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, including a significant disturbance of the Site vegetative cover, contaminated soils, or other change in Site conditions which may result in an exposure to soil containing elevated contaminant levels.

When an emergency situation is identified, DPR will immediately take all appropriate action to prevent, abate, or minimize such release, threat of release, and/or potential for exposure. The response actions will be performed in accordance the Site-Specific Health and Safety Plan prepared for Red Hook Ball Fields 5-8, Brooklyn, NY dated March 2016 (or current revised version).

In the event of any environmentally-related situation or unplanned occurrence requiring immediate response and corrective measures, the DPR Chief of Brooklyn Borough Operations will be contacted, who will then contact the appropriate DPR and emergency management personnel and contractors, as necessary. DPR will also immediately notify (in less than 24 hours) the below-listed USEPA Site representative:

EPA Contact/Title	**Office Phone Number**	**Cellular Phone Number**
Margaret Gregor / USEPA On-Scene Coordinator (OSC)	(732) 321-4424	(908) 421-2624
DPR Contact/Title	**Office Phone Number**	**Cellular Phone Number**
Jeffrey Sigadel, Chief of Brooklyn Borough Operations	(718) 965-8922	(917) 337-4728
Kay Zias / NYC Parks Dept. Director of Remediation	(718) 760-6748	NA
Imelda Bernstein / NYC Parks Dept. Landscape Architect	(718) 760-6637	NA
Service	**Emergency Telephone Numbers**	**Direct Telephone Numbers**
Police: New York Police Department	**Emergency:** 911	**NYPD – 76th Precinct** (718) 834-3211
Fire: Fire Department of New York		(718) 999-2000
Ambulance: Transcare Ambulance Service		(718) 369-0839
Poison Control		800-222-1222

		Local Number: (212) 689-9014
CHEMTREC		800-424-9300 (Customer No. CCN 671126)
National Response Center		(800) 424-8802

In the event that the USEPA OSC is not available, DPR will notify the Regional Duty Officer of any spills, releases or significant disturbance that could result in exposure to on-site contaminated soils, through the National Response Center at (800) 424-8802 of the incident, and provide a plan and schedule for the appropriate assessment and/or response actions. The notification to the Regional Duty Officer through the NRC should reference the Columbia Smelting and Refining Works Site Removal Action.

DPR will submit a written report of any such environmental-related emergency conditions to the USEPA within seven (7) days after any such release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004.